NETWORK PROJECT ON BUFFALO IMPROVEMENT

ANNUAL REPORT 2021 – 2022

AND

PROJECT CO-ORDINATOR'S OBSERVATIONS

ICAR- CENTRAL INSTITUTE FOR RESEARCH ON BUFFALOES
SIRSA ROAD, HISAR – 125 001 (HARYANA)

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Director & PC(B)
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COORDINATING UNIT

ICAR- CENTRAL INSTITUTE FOR RESEARCH ON BUFFALOES
HISAR – 125 001 (HARYANA)

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NETWORK PROJECT ON BUFFALO IMPROVEMENT

Annual Report 2021-22

All India Coordinated Research Project on buffaloes was initiated in the year 1970-71 for genetic evaluation of large and medium size buffaloes which was later on made specific on two important breeds viz. Murrah and Surti in the coordinated program. The main thrust was to test the sires with a view to produce proven bulls for enhancing milk production. The efforts made by scientific manpower through this venture are able to standardize testing methodology and germplasm evaluation for superior bull production of important breeds of buffaloes. The infrastructure has been created which is capable to generate germplasm in the form of bulls and frozen semen at some of the testing centers.

Network Project on Buffalo Improvement and running at ICAR-Central Institute for Research on Buffalo, Hisar since 1993. This has ensured sustained maintenance and production of improved germplasm on large scale for use in buffalo improvement program and for establishing linkages with institutions. This is the only centre in India where semen from progeny tested proven bulls are available. Progeny testing in Murrah Breed is carried out at Six participating institutional /SVU centres viz. CIRB Hisar, NDRI Karnal and IVRI Izatnagar, GADVASU Ludhiana, LUVAS Hisar and ICAR Research Complox for Eastren Region Patna.Three funded field centers of Murrah were also initiated in 2001 at CIRB Hisar, NDRI Karnal and GADVASU Ludhiana to produce more number of daughters per bull for accurately evaluating the breeding bulls. 16836 artificial inseminations were carried out in 2021-22 at farmer's door in the village to produce daughters. The milk yields of daughters are being recorded for use in sire evaluation.

1071 breedable buffaloes are being maintained at institutional Murrah centres for production of high genetic merit male and female calves to be used for production of future sires. As per technical program for Murrah breed, a set of upto 18 pedigreed bulls is selected in each set and it is used for AI in the associated herds (1600 AIs per annuam) and field buffaloes (approximately 16000 AIs per annum) for test mating over 18 months duration. From 1st January 2022 to 30th June 2023 semen of XX set is being used at the Murrah centres. There are 18 superior bulls (7 bulls from CIRB Hisar, 7 bulls from GADVASU Ludhiana, 2 bull from LUVAS, Hisar and 2 bull from NDRI Karnal are in the XX set. So far, 261 superior bulls have been testmated in 19 sets.

Data of 834 daughters born from the 15th set of bulls which completed 1st lactation was compiled and bulls were evaluated. Bull no. 4354 from CIRB Hisar, 6007 from NDRI and 2459 from GADVASU Ludhiana ranked 1st, 2nd and 3rd with breeding value 2589 kg, 2588 kg and 2587 kg, respectively. The percent superiority by BLUP Model was 1.67, 1.61 and 1.58 respectively.

Elite herds of Jaffarabadi, Surti, Bhadawari and Nili Ravi breeds of buffaloes have been established in their respective breeding tracts. Semen freezing laboratories have been established at all the centres. Nili-Ravi and Bhadawari breed centres are functioning as conservation and improvement units and Jaffarabadi and Surti breed centre are concentrating on field progeny testing along with maintaining the elite herd for bull production and testing. A breedable herd of 649 (Nili-Ravi-316, Jaffarabadi-202, Surti-70 and Bhadawari-61) is being maintained at the above four breeds.

During the year 2,97,715 semen doses produced and 2,39,462 semen doses were used for AI's/Sold/Exp. Production and dissemination of Murrah breeing bulls semen doses was 2,60,833 and 2,20,178 respectively, in other breed 36,882 semen doses produced and 19,284 disseminated i.e sale/used in farm herd/ field under field progeny testing program.

HEAD-WISE/YEAR-WISE PHASING OF BUDGET OUTLAY FOR NPBI

Centre wise and Headwise allocation and release of funds for Network Project on Buffalo Improvement as per R E for the FY 2021-22

(Rs. In lakh)

Name of the centre	SALARY		General					Capital									Total			Released ICAR Share
	Total Pay	ICAR share	Rec Cont.	ICAR share	**ICAR share SCSP**	TA	ICAR share	Equi pment	ICAR share	**ICAR share SCSP**	Works	ICAR share	Live-stock	ICAR share	Fur. Fixt.	ICAR Share	Net Requir ement	ICAR Share	State Share	
ICAR Based centres																				
Coordinating Unit, Hisar	0.00	0.00	25.50	25.50	5.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.50	33.50
CIRB, Hisar, Main Unit	0.00	0.00	30.00	30.00	4.00	0.00	0.00	6.00	6.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00	40.00
NDRI Karnal, Main Unit	0.00	0.00	14.00	14.00	3.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.00	19.00
IVRI, Izatnagar Main Unit	0.00	0.00	14.00	14.00	3.00	0.00	0.00	1.00	1.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.00	18.00
IGFRI Jhansi	0.00	0.00	41.00	41.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.00	43.00
ICAR Res. Comp. ER Patna	0.00	0.00	18.00	18.00	2.00	0.00	0.00	1.50	1.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.50	21.50
CIRB Sub Campus, Nabha	0.00	0.00	34.00	34.00	5.00	0.00	0.00	2.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.00	42.00
CIRB, Hisar FPT	0.00	0.00	17.00	17.00		0.00	0.00	1.00	1.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.00	18.00
NDRI, Karnal, FPT	0.00	0.00	15.00	15.00		0.00	0.00	1.00	1.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.00	16.00
SAU's Based centres																				
GADVASU, Ludhiana (Murrah)	18.20	13.65	60.00	45.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.20	61.65
GADVASU, Ludhiana (FPT)	24.00	18.00	24.00	18.00		0.00	0.00	2.00	1.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	37.50
LUVAS, Hisar	0.00	0.00	60.00	45.00	3.00	0.00	0.00	4.00	3.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.00	52.00
JAU, Junagadh	22.00	16.50	54.00	40.50	3.00	0.00	0.00	2.00	1.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.00	62.50
RAJVASU, Bikaner	0.00	0.00	54.00	40.50	3.00	0.00	0.00	4.00	3.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.00	47.50
MPKV, Kolhapur	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GADVASU, Ludhiana (Nili Ravi)	0.00	0.00	30.00	22.50		0.00	0.00	2.00	1.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.00	24.00
Total	**64.20**	**48.15**	**490.5**	**420.00**	**35.00**	**0.00**	**0.00**	**28.50**	**25.00**	**8.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**626.20**	**536.15**
ICAR Share	**48.15**		**420.00**		**35.00**	**0.00**		**25.00**		**8.00**	**0.00**		**0.00**		**0.00**				**536.15**	
State Share	16.05		70.50			0.00		3.50			0.00		0.00		0.00				90.05	

PARTICIPATING CENTRES (As on 31.03.2022)

Coordinating Unit, CIRB, Hisar

Sr No	Name of centre	Breed	Year of start
Agricultural University based centers			
I	GADVASU, Ludhiana	Murrah	1993
II	LUVAS, Hisar	Murrah	1993
III	JAU, Junagarh	Jaffarabadi	2001
IV	RAJVASU, Vallabhnagar	Surti	2001
V	Field Unit GADVASU, Ludhiana	Murrah	2001
VI	GADVASU, Ludhiana	Nili-Ravi	2018
ICAR Institute based Centres			
I	ICAR-CIRB, Hisar (Main Unit)	Murrah	1993
II	ICAR-NDRI, Karnal (Main Unit)	Murrah	1993
III	ICAR-IVRI, Izatnagar (Main Unit)	Murrah	1993
IV	ICAR- IGFRI, Jhansi	Bhadawari	2001
V	ICAR-CIRB, Sub - Campus Nabha	Nili-Ravi	2001
VI	Field Unit NDRI, Karnal	Murrah	2001
VII	Field Unit CIRB, Hisar	Murrah	2001
VIII	ICAR Res. Comp. ER Patna (Main Unit)	Murrah	2014

Scientists Meets:	**Place**	**Duration**
1st Scientist meet	GAU, Junagarh,	February 10-11, 1993
2ndScientist meet	PAU Ludhiana	April 28 – 29, 1994
3rdScientist meet	RAU, Udaipur	November 2 - 3, 1995
4thScientist meet	PAU, Ludhiana	July 28 – 29, 2000
5thScientist meet	AAU, Khanapara	January 3- 4, 2002
6thScientist meet	MPKV, Kolhapur	April 5 - 6, 2005
7thScientist meet	CIRB, Hisar	April 4 - 5, 2007
8thScientist meet	JAU, Junagadh	March 5 - 6, 2009.
Midterm Review meet	CIRB, Hisar	December 5, 2009
9th Scientist meet	CIRB, Hisar	November 27-28, 2010
10thAnnual Review Meet	Bhuj, Gujarat	September 2 - 3, 2011
11thAnnual Review Meet	NDRI, Karnal	August 24, 2012
12thAnnual Review Meet	LRS Vallabhnagar	September 09-10, 2014
13th Annual Review Meet	CIRB, Hisar	September 23-24, 2015
14th Annual Review Meet	GADVASU, Ludhiana	July04 - 05, 2016
15th Annual Review Meet	ICAR RCER, Patna	July 21 - 22, 2017
16th Annual Review Meet	ICAR-NDRI, Karnal	November 19 - 20, 2018
17th Annual Review Meet	ICAR-NASC Complex, New Delhi	August 27 - 28, 2019
18th Annual Review Meet	Held through Zoom online mode by ICAR-CIRB, Hisar	March 19th 2021

CENTRE WISE PERFORMANCE, RESEARCH ACHIEVEMENTS AND PROJECT COORDINATOR OBSERVATIONS

Participating Institutional herds of Murrah Breeds

1.	**ICAR-CIRB Hisar**	ICAR based
2.	**ICAR-NDRI Karnal**	ICAR based
3.	**ICAR-IVRI Izatnagar**	ICAR based
4.	**ICAR Res. Complex for ER Patna**	ICAR Based
5.	**GADVASU Ludhiana**	SAU based
6.	**LUVAS, Hisar**	SAU based

Mandate of Network Project

To undertake genetic improvement and conservation of important breeds of buffaloes

Objectives:

1. To establish elite herd of 1200 breedable Murrah / 400 Nili-Ravi / 225 Jaffarabadi / 75 Bhadawari /100 Surti buffalo for the production of genetically superior young bulls.
2. To evaluate sires through institutional / associated herd/field progeny testing.
3. To produce, test, propagate and conserve high genetic merit male germplasm.

Technical Programme: The technical programme involves testing of 12-15 bulls on about 1000 breedable buffaloes at organised farms at GADVASU, Ludhiana; CIRB, Hisar; NDRI, Karnal; IVRI, Izatnagar; in every 18-month's cycle. From each bull 75-80 pregnancies are to be obtained so that 20-25 recorded daughters per bull are available at all the centres for the evaluation of bulls. The bulls will be ranked on the basis of performance of their daughters and 20% of them will be selected as proven bulls from each set. The semen of the proven bulls will be used on elite buffaloes at different centres for the production of future sires and herd replacements.

A. Growth rate targets :-

Age group	Target growth rate (g) per day		Expected body weight at terminal age (kg)	
	Female	Male	Female	Male
Birth-6 mths	450	450	112	112
6-18 mths	500	550	294	312
18-24 mths	400	530	367	410
24-30 mths	400	450	440	520
30-36 mths	300	350	495	584

N.B. Average birth weight, 30kg

B. Reproduction and production targets: -

i.	Av. age at first service	= 24 months (300kg B. wt.)
ii.	Av. age at first calving	= 40 months
iii.	AV. age for initiating training of bulls	= 18 months (350 kg B. wt.)
iv.	Av. age at first collection	= 30 months (400 kg B.wt.)
v.	Av. service period	= 130 days
vi.	Calf mortality (0-3 mths)	= ≤3%
vii.	Wet average	= ≥ 8.5 kg
viii.	Herd average	= ≥5.5 kg

ICAR-CENTRAL INSTITUTE FOR RESEARCH ON BUFFALOES, HISAR (MAIN UNIT)

Report Period : 2021-22

1. Name of centre : CIRB, Hisar
2. Project Code :
3. Project Title : Network Project on Buffalo Improvement (Murrah)
4. Date of Start : 1993
5. **Objective:**
   - i. To establish elite herd of 50 to 100 Murrah (at each center) for the production of genetically superior young bulls.
   - ii. To evaluate sires through institutional / associated herd/field progeny testing
   - iii. To produce, test, propagate and conserve high genetic merit male germplasm

6. Technical Programme:

- I. Establishment and maintenance of an elite herd of Murrah buffalo with a herd strength of 500 and 300 breedable females.
- II. Selection and testing of minimum 15 bulls of Murrah in every 18 months cycle.
- III. Production of minimum 10,000 frozen semen doses from each test bull.
- IV. Maintain a minimum number of 8000 frozen semen doses until the particular SET gets evaluated.
- V. Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
- VI. Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
- VII. Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield.
- VIII. Life time productivity traits viz: herd life, productive life, lifetime milk yield, milk yield per day of herd life for buffaloes completed 4th or more lactation.
- IX. Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
- X. Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
- XI. Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Financial Statement for 2021-22:

(Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure		Balance
Total	ICAR Share		ICAR Share	State Share	
33.50	33.50	33.50	33.50	0.00	0.00

8. Staff Position : Redemployment

9. **Herd Performance**

9.1 Herd Strength during the Period 1st April 2021 to 31st March, 2022

Sr. No.	Category	Addition			Disposal				CB
		OB	**B / P**	**T**	**D**	**T**	**S**	**E**	**CB**
	Female								
1.	Below 3 months	14	89		4		2		16
2.	3-12 months	63			0		0		67
3.	1-2 years	77			0		0		77
	Above 2 years	83			0		13		81
4.	Buffaloes in Milk	139			1		27		139
5.	Buffaloes Dry P /NP	43			1		19		53
	Sub Total	**419**	**89**		**6**		**61**		**433**
	Males								
1.	Below 3 months	14	69		2		0		13
2.	3-12 months	64			2		15		52
3.	1-2 years	32			0		23		51
	Above 2 years	10			0		19		13
4.	Breeding bulls	15			0		0		14
5.	Bullocks/Teasers/others	1			0		0		0
	Sub Total	**136**	**69**		**4**		**57**		**144**
	Grand Total	**555**	**158**		**10**		**118**		**576**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

Table 9.2: Calving Statistics during the period April 2021 – March 2022

Month	Male	Female	Still Birth	Abortion	Overall
April-2021	5	5	--	1	11
May	4	4	1	1	10
June	6	4	--	-	10
July	7	13	--	-	20
August	7	11	2	1	21
September	11	10	--	--	21
October	8	7	--	--	15
November	4	8	1	--	13
December	3	11	2	--	16
January-2022	8	7	--	--	15
February	4	7	2	--	13
March	2	2	1	--	5
Overall	**69**	**89**	**9**	**3**	**170**

9.3. Disposal of Animals (1st April 2021 to 31st March 2022)

Female	Primary cause of disposal							
Category	Surplus	Low Producers	Reprod. Problem	Weak & Old	Udder Health	Death	Exptl.	Total
Calves								
0 to 3 months	2	--	--	--	--	4	--	6
3-12 months	--	--	--	--	--	--	--	--
Heifers								
1-2 years	--	--	--	--	--	--	--	--
> 2 years	5	--	6	2	--	-	--	13
Buffaloes								
Milch	3	7	7	4	6	1	--	28
Dry	3	4	9	1	2	1	--	20
Sub Total	13	11	22	07	08	06	--	67
Males	Primary cause of disposal							
Calves								
0 to 3 months	--	--	--	--	--	2	--	2
3-12 months	14	1	--	--	--	2	--	17
Young bull								
1-2 years	22	1	--	--	--	--	--	23
>2 years	17	2	--	--	--	--	--	19
Breeding bulls	-	--	--	--	--	--	--	--
Bullock+Teaser etc	--	--	--	--	--	--	--	--
Sub Total	53	4	--	--	--	4	--	61
Grand Total	66	15	22	07	08	10	--	128

9.4 Mortality during the Period 1st April 2020 to 31st March, 2022

Month	Details	Female						Male					Total (Male + female)
		0-3 (Month)	3-6	6-12	>1yrs	>2yrs	Overall	0-3 (Month)	3-6	6-12	>1yrs	Overall	
April	No	21	19	46	157	165	408	23	19	22	53	117	525
	Died	--	--	--	--	--	--	--	--	--	--	--	--
	%	--	--	--	--	--	--		--	--	--	--	--
May	No	19	23	45	157	167	411	20	21	24	57	112	533
	Died	--	--	--	--	--	--	--	--	--	--	--	--
	%	--	--	--	--	--	--	--	--	--	--	--	--
June	No	13	15	49	151	175	403	12	22	43	58	145	548
	Died	--	--		--	--		1	--	--	--	1	1
	%	--	--		--	--		8.33	--	--	--	0.69	0.18
July	No	13	14	50	151	172	400	16	16	50	69	151	551
	Died	1	--	--	--	--	1	--	--	--	--	--	1
	%	7.69	--	--	--	--	0.25	--	--	--	--	--	0.18
August	No	20	12	49	153	177	411	18	16	47	72	153	564
	Died	1	--	--	--	--	1	--	--	--	--	--	1
	%	5.00	--	--	--	--	0.24	--	--	--	--	--	0.18
September	No	25	13	43	149	191	421	21	13	46	71	151	572
	Died	--	--	--	--	--	--	--	--	--	--	--	--
	%	--	--	--	--	--	--	--	--	--	--	--	--
October	No	31	13	40	147	199	430	27	16	43	75	163	593
	Died	1	--	--	--	1	2	--	--	--	--	--	2
	%	3.23	--	--	--	0.50	0.47	--	--	--	--	--	0.34

November	No	26	19	35	154	201	435	27	15	35	86	165	600
	Died	1	--	--	--	--	1	--	--	--	--	--	1
	%	3.85	--	--	--	--	0.23	--	--	--	--	--	0.17
December	No	22	24	24	159	180	409	23	21	29	79	152	561
	Died	--	--	--	--	--	--	--	--	--	--	--	--
	%	--	--	--	--	--	--	--	--	--	--	--	--
January	No	24	29	27	157	178	415	15	26	28	81	154	569
	Died	--	--	--	--	1	1	--	--	--	--	--	1
	%	--	--	--	--	0.56	0.24	--	--	--	--	--	0.18
February	No	24	32	25	159	185	423	15	29	31	84	159	582
	Died	--	--	--	--	--	--	1	1	--	--	--	2
	%	--	--	--	--	--	--	6.67	3.45	--	--	--	0.34
March	No	16	33	34	126	223	433	13	24	28	78	142	576
	Died	--	--	--	--	--	--	--	1	--	--	1	1
	%	--	--	--	--	--	--	--	4.17	--	--	0.70	0.17

Overall Calf mortality (0-3 months): 3.23 % (6/186)

9.5. Causes of Mortality (qtr. wise) during the period 1st April 2021 to 31st March, 22

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	1	1	1	1	4
Pheumonities	0	1	1	2	4
TRP / TP	0	0	1	0	1
Miscellaneous	0	0	0	1	1
Total	1	2	3	4	10

9.6 Prophylactic Measures undertaken during 2021-22

Disease	**Vaccination: Month / No. of animals**	**No. of animals** Tested / Positive		**Month and No. of animals treated for Parasitism**
FMD	July/606, Oct/616, Feb/611	----	----	Apr/120, May/81, Jun/82, Jul/82, Aug/96, Sept/107, Oct/100, Nov/100, Dec/96, Jan/87, Feb/94, Mar/9
HS	July/606, Oct/616, Feb/611	----	----	
BQ	July/606, Feb/611	----	----	
Brucellosis	June/26, Dec. /37, Mar/13	51	Nil	
JD		36	Nil	
TB		36	Nil	
IBR		40	01	
Mastitis		218	23	
Trichomnas		16	Nil	
Campylobacter		16	Nil	

9.7 Female Conception Rate During the Period January to December 2021

Category →	**Heifers**			**Adult**			**Overall**		
AI ↓	**I**	**C**	**CR%**	**I**	**C**	**CR%**	**I**	**C**	**CR%**
1st	63	34	53.97	159	71	44.65	222	105	47.30
2nd	37	19	51.35	90	34	37.78	127	53	41.73
3rd	24	13	54.17	60	28	46.67	84	41	48.81
4th & above	26	18	69.23	62	27	43.55	88	45	51.14
Overall	150	84	**56.00**	371	160	**43.13**	521	244	**46.83**

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate

Quarter	No. of A I	Pregnancy	CR %
January – March 21 Previous year	147	63	42.86
April – June 2021	85	42	49.41
July – September 2021	132	58	43.94
October- December 2021	157	81	51.59
Overall	**521**	**244**	**46.83**

9.9. Bull-wise Conception Rate During the period January to December, 2021

Sr. No.	Bull No.	SET No.	Total AI	Conceived	CR%
1.	5310	19th	43	21	48.84
2.	5320	19th	50	22	44.00
3.	5374	19th	47	20	42.55
4.	2269	13th PT	20	8	40.00
5.	7604	19th	37	19	51.35
6.	1315	19th	36	25	69.44
7.	3591	11th PT	15	7	46.67
8.	4354	15th PT	21	12	57.14
9.	HAU-12	11th	6	3	50.00
10.	6007	15th PT	4	3	75.00
11.	5333	19th	52	21	40.38
12.	2357	14th PT	6	2	33.33
13.	5181	19th	23	8	34.78
14.	5232	19th	33	21	63.64
15.	6044	14th PT	2	1	50.00
16.	4196	14th PT	35	11	31.43
17.	5246	19th	22	7	31.82
18.	2737	19th	24	11	45.83
19.	2674	19th	26	14	53.85
20.	2759	19th	19	8	42.11
Over all			**521**	**245**	**46.83**

9.10 Bull Wise Semen Stock

Sr. No.	Bull No	Centre	SET	Dam's Peak Yield	Opening balance	Received	Sold	Supp.	Exp.	Balance
1	392	CIRB	I PT	2594	113	0	0	0	0	113
2	3567	NDRI	I PT	2877	250	0	0	0	0	250
3	896	CIRB	I	3003	142	0	0	0	0	142
4	3098	NDRI	I	3164	250	0	0	0	0	250
5	761	CIRB	II PT	2578	276	0	0	0	0	276
6	93	CIRB	II PT	22kg	88	0	0	0	0	88
7	829	CIRB	II PT	2626	250	0	0	0	0	250
8	759	CIRB	II	2650	198	0	0	0	0	198
9	3638	NDRI	II	3278	250	0	0	0	0	250
10	3551	NDRI	II	3898	136	0	0	0	0	136
11	1253	GAD	II	3348	36	0	0	0	0	36
12	1268	GAD	II	2802	265	0	0	0	0	265
13	1290	GAD	II	2628	250	0	0	0	0	250
14	1153	CIRB	III PT	2540	250	0	0	0	0	250
15	1061	CIRB	III	2846	209	0	0	0	0	209
16	1354	GAD	III PT	3088	108	0	0	0	0	108

17	1165	CIRB	III	2627	250	0	0	0	0	250
18	3930	NDRI	III	2912	250	0	0	0	0	250
19	1131	CIRB	III	2827	98	0	0	0	0	98
20	3966	NDRI	III	3700	258	0	0	0	0	258
21	1023	CIRB	III	2710	252	0	0	0	0	252
22	1171	CIRB	III	3007	256	0	0	0	0	256
23	993	CIRB	III	2976	100	0	0	0	0	100
24	1315	GAD	III	2808	266	0	0	0	0	266
25	1084	CIRB	III	3007	98	0	0	0	0	98
26	1506	GAD	IV PT	3018	250	0	0	0	0	250
27	1451	GAD	IV PT	3401	250	0	0	0	0	250
28	1437	GAD	IV	3127	250	0	0	0	0	250
29	1319	CIRB	IV	2538	250	0	0	0	0	250
30	1341	CIRB	IV	2878	83	0	0	0	0	83
31	1538	CIRB	IV	2786	98	0	0	0	0	98
32	1363	CIRB	IV	3031	98	0	0	0	0	98
33	1434	CIRB	IV	2640	6	0	0	0	0	6
34	1360	CIRB	IV	2537	250	0	0	0	0	250
35	1485	CIRB	V	2523	246	0	0	0	0	246
36	4371	NDRI	V PT	3258	253	0	0	0	0	253
37	4245	NDRI	V	3215	250	0	0	0	0	250
38	4395	NDRI	V	3344	116	0	0	0	0	116
39	1798	CIRB	V	2753	250	0	0	0	0	250
40	1641	CIRB	V	2753	34	0	0	0	0	34
41	1536	GAD	V	3786	259	0	0	0	0	259
42	1491	CIRB	V	3148	250	0	0	0	0	250
43	1555	GAD	V	2948	175	0	0	0	0	175
44	1749	CIRB	V	2796	173	0	0	0	0	173
45	1573	GAD	V	2866	279	0	0	0	0	279
46	1717	GAD	VI	2775	68	0	0	0	0	68
47	1153	HAU	VI PT	2675	250	0	0	0	0	250
48	4506	NDRI	VI PT	3512	123	0	0	0	0	123
49	1933	CIRB	VI	2650	250	0	0	0	0	250
50	1944	CIRB	VI	2752	148	0	0	0	0	148
51	1135	CIRB	VI	3250	132	0	0	0	0	132
52	1667	GAD	VI	2988	58	0	0	0	0	58
53	1836	CIRB	VI	2744	133	0	0	0	0	133
54	1922	CIRB	VI	2684	83	0	0	0	0	83
55	2028	CIRB	VI	2689	142	0	0	0	0	142
56	1796	GAD	VII PT	3170	9	0	0	0	0	9
57	2331	CIRB	VII	2664	250	0	0	0	0	250
58	4807	NDRI	VII	3437	68	0	0	0	0	68
59	1749	GAD	VII	3182	68	0	0	0	0	68
60	1727	GAD	VII	3098	47	0	0	0	0	47
61	1419	CIRB	VII	3042	267	0	0	0	0	267
62	2363	CIRB	VII	2654	153	0	0	0	0	153
63	1746	GAD	VII	2718	40	0	0	0	0	40
64	2184	CIRB	VII	2574	188	0	0	0	0	188
65	1875	GAD	VIII PT	2714	42	0	0	0	0	42
66	4813	NDRI	VIII PT	3016(1)	18	0	0	0	0	18
67	2422	CIRB	VIII	3369	250	0	0	0	0	250
68	2522	CIRB	VIII	2567	98	0	0	0	0	98
69	1868	GAD	VIII	2591	160	0	0	0	0	160
70	2308	CIRB	VIII	2655	250	0	0	0	0	250
71	2250	CIRB	VIII	2748	100	0	0	0	0	100
72	5049	NDRI	VIII	2912	68	0	0	0	0	68
73	1867	GAD	VIII	2709(1)	250	0	0	0	0	250
74	1509	CIRB	VIII	3690	112	0	0	0	0	112
75	4865	NDRI	VIII	3392	38	0	0	0	0	38
76	1893	GAD	VIII	2753	150	0	0	0	0	150
77	2479	CIRB	VIII	2519	100	0	0	0	0	100

78	1994	GAD	IX PT	2938	253	0	0	0	0	253
79	5197	NDRI	IX	2831	250	0	0	0	0	250
80	2582	CIRB	IX	2836	111	0	0	0	0	111
81	5112	NDRI	IX	2831	250	0	0	0	0	250
82	2720		IX	2664	162	0	0	0	0	162
83	1903	GAD	IX	2718	136	0	0	0	0	136
84	1575	CIRB	IX	3194	100	0	0	0	0	100
85	2592	CIRB	IX	3336	173	0	0	0	0	173
86	5218	NDRI	IX	3333	170	0	0	0	0	170
87	2910	CIRB	IX	3062	147	0	0	0	0	147
88	1940	GAD	IX	2775	250	0	0	0	0	250
89	1913	GAD	IX	2740	251	0	0	0	0	251
90	1964	GAD	IX	2672	13	0	0	0	0	13
91	333 Golu	Didwadi	IX	22 kg PY	48	0	0	0	0	48
92	2990	CIRB	X	2655	250	0	0	0	0	250
93	3103	CIRB	X	2942	250	0	0	0	0	250
94	1693	CIRB	X PT	3194	250	0	0	20	0	230
95	2045	GAD	X PT	3369	447	0	0	0	0	447
96	507	CIRB	X	2572	250	0	0	0	0	250
97	2062	GAD	X	2672	250	0	0	0	0	250
98	2073	GAD	X	2717	250	0	0	0	0	250
99	2074	GAD	X	3050	250	0	0	0	0	250
100	2083	GAD	X	3063	250	0	0	0	0	250
101	3631	CIRB	X	18 kg PY	250	0	0	0	0	250
102	ND2	NDAUT	X	2583	135	0	0	0	0	135
103	3267	CIRB	XI PT	2489	250	0	0	20	0	230
104	3591	CIRB	XI PT	2598	820	0	0	90	0	730
105	2133	GAD	XI	2844	250	0	0	0	0	250
106	2148	GAD	XI	3008	102	0	0	0	0	102
107	2154	GAD	XI	2593	98	0	0	0	0	98
108	3226	CIRB	XI	2655	250	0	0	0	0	250
109	3255	CIRB	XI	3051	250	0	0	0	0	250
110	12-HAU	CIRB	XI	2858	250	0	0	20	0	230
111	5489	NDRI	XI	3031	250	0	0	0	0	250
112	5496	NDRI	XI	2780	250	0	0	0	0	250
113	5516	NDRI	XI	2765	250	0	0	0	0	250
114	ND6	NDAUT	XI	2702	250	0	0	0	0	250
115	ND8	NDAUT	XI	2702	250	0	0	0	0	250
116	2185	GAD	XII PT	3423	246	0	0	0	5	241
117	183	HAU	XII PT	2824	1288	0	0	0	5	1283
118	2176	GAD	XII	2754	208	0	0	0	0	208
119	2177	GAD	XII	3024	275	0	0	0	0	275
120	3598	CIRB	XII	2655	250	0	0	0	0	250
121	R-10	CIRB	XII	5192	412	0	0	30	0	382
122	R-11	CIRB	XII	4000	614	0	0	0	0	614
123	220	HAU	XII	2631	271	0	0	0	5	266
124	4059	CIRB	XIII	2510	250	0	0	0	0	250
125	3964	CIRB	XIII	3369	250	0	0	0	0	250
126	4440	CIRB	XIII	2850	250	0	0	0	0	250
127	4441	CIRB	XIII	3805	250	0	0	0	0	250
128	4442	CIRB	XIII	2882	250	0	0	0	0	250
129	5943	NDRI	XIII	3232	83	0	0	0	0	83
130	2234	GAD	XIII PT	3114	25	0	0	0	5	20
131	2269	GAD	XIII PT	3617	230	0	0	0	0	230
132	2304	GAD	XIII	3114	96	0	0	0	0	96
133	4439	CIRB	XIV	22 kg PY	951	0	0	0	0	951
134	4093	CIRB	XIV	3040	250	0	0	0	0	250
135	4196	CIRB	XIV PT	3304	1003	0	0	145	0	858
136	4100	CIRB	XIV	2971	250	0	0	0	0	250
137	6014	NDRI	XIV	3072	250	0	0	0	0	250
138	6044	NDRI	XIVPT	3567	849	0	0	65	0	784

139	6136	NDRI	XIV	4341	1158	0	0	0	0	1158
140	2369	GAD	XIV	3114	250	0	0	0	0	250
141	2357	GAD	XIVPT	3559	853	0	0	40	0	813
142	4354	CIRB	XV	3605	6378	0	38	218	20	6102
143	4324	CIRB	XV	3528	6224	0	5724	0	0	500
144	4438	CIRB	XV	3222	4533	0	4033	0	0	500
145	4363	CIRB	XV	3068	6483	0	5983	0	0	500
146	4403	CIRB	XV	3059	5574	0	5074	0	0	500
147	4328	CIRB	XV	3228	6217	0	5375	0	0	842
148	2371	GAD	XV	3053	2055	0	1560	0	0	495
149	2412	GAD	XV	2998	5418	0	4852	0	0	566
150	2417	GAD	XV	3565	1218	0	0	0	0	1218
151	2429	GAD	XV	3435	5886	0	5346	0	0	540
152	2459	GAD	XV	4636	4990	0	2755	40	0	2195
153	6007	NDRI	XV	3260	1652	0	0	120	0	1532
154	6139	NDRI	XV	2828	2152	0	1652	0	0	500
155	6290	NDRI	XV	4341	500	0	0	0	0	500
156	6405	NDRI	XV	2743(1)	2000	0	1480	0	0	520
157	4889	CIRB	XVI	4120	8000	0	0	0	0	8000
158	4705	CIRB	XVI	3990	6199	0	0	0	0	6199
159	4592	CIRB	XVI	3528	5975	0	0	0	0	5975
160	M-29	CIRB	XVI	4600	7268	0	2	0	0	7266
161	1027	LUVAS	XVI	3763	6926	0	0	0	0	6926
162	1053	LUVAS	XVI	3559	6622	0	0	0	0	6622
163	1064	LUVAS	XVI	3579	5816	0	0	0	0	5816
164	2467	GAD	XVI	3574	2026	0	0	0	0	2026
165	2501	GAD	XVI	3053	2788	0	150	0	0	2638
166	2383	GAD	XVI	4636	1981	0	0	0	0	1981
167	6379	NDRI	XVI	3505	2257	0	0	0	0	2257
168	6409	NDRI	XVI	4090	2207	0	0	0	0	2207
169	6646	NDRI	XVI	3533	2023	0	0	0	0	2023
170	6753	NDRI	XVI	3389	2508	0	0	0	0	2508
171	M-51	CIRB	XVII	4668	8000	0	0	0	0	8000
172	4715	CIRB	XVII	3059	6043	0	0	0	0	6043
173	4733	CIRB	XVII	2851 (1)	6376	0	0	0	0	6376
174	4687	CIRB	XVII	3309	3998	0	0	0	10	3988
175	M-53	CIRB	XVII	4100	8000	0	0	0	0	8000
176	Sikander	PVT	XVII	28.9 kg	3823	0	0	0	0	3823
177	Daara	PVT	XVII	28.9 kg	1635	0	0	0	0	1635
178	2565	GAD	XVII	3287	494	0	50	0	5	439
179	2594	GAD	XVII	3557	849	0	0	0	0	849
180	7010	NDRI	XVII	3068	2205	0	0	0	5	2200
181	4837	CIRB	XVII	3076	7418	0	0	0	0	7418
182	2558	GAD	XVII	3574	1194	0	0	0	0	1194
183	B1-330	CIRB	XVII	4595	7958	0	0	0	5	7953
184	2607	GAD	XVII	3899	375	0	0	0	5	370
185	1148	LUVAS	XVII	3124	8000	0	0	0	5	7995
186	6942	NDRI	XVII	3188	2625	0	0	0	0	2625
187	4905	CIRB	XVIII	3371/14	8000	0	0	0	0	8000
188	5147	CIRB	XVIII	3057/14.8	8000	0	0	0	0	8000
189	1209	LUVAS	XVIII	3593/17.2	7485	0	0	0	0	7485
190	4995	CIRB	XVIII	3064/15.5	8000	0	0	0	0	8000
191	7094	NDRI	XVIII	3465/17	948	1000	0	0	0	1948
192	7227	NDRI	XVIII	3099/16.5	498	0	0	0	0	498
193	7147	NDRI	XVIII	3108/15.5	748	1500	0	0	0	2248
194	2676	GAD	XVIII	3023/15.5	2375	0	0	0	5	2370
195	2677	GAD	XVIII	3135/16.5	2375	0	0	0	0	2375
196	1219	LUVAS	XVIII	3837/17.8	4230	0	0	0	0	4230
197	2689	GAD	XVIII	3151/18.8	737	0	0	0	0	737
198	7263	GAD	XVIII	3465/17.0	1080	1000	0	0	0	2080
199	1208	CIRB	XVIII	3437/15.1	8000	0	0	0	0	8000

200	1150	CIRB	XVIII	3127/15.9	8000	0	0	0	0	8000
201	2645	GAD	XVIII	3394/19	1799	0	0	0	5	1794
202	2674	GAD	XIX	3583/23.0	1917	2015	0	1320	0	2612
203	2737	GAD	XIX	3241/22.8	930	565	0	1020	0	475
204	2759	GAD	XIX	3340/20.7	1170	1980	0	545	0	2605
205	7604	NDRI	XIX	3158/16.0	0	4300	0	2955	0	1345
206	1315	LUVAS	XIX	3824/18.4	0	10217	0	3750	0	6467
207	5181	CIRB	XIX	3428/17.9	0	9570	0	695	0	8875
208	5246	CIRB	XIX	3124/15.7	0	10070	0	830	0	9240
209	5232	CIRB	XIX	3513/16.3	0	10040	0	405	0	9635
210	5310	CIRB	XIX	4069/20.0	0	10040	0	1420	0	8620
211	5320	CIRB	XIX	3340/15.2	0	10861	0	2900	0	7961
212	5333	CIRB	XIX	3304/17.6	0	11418	0	3205	0	8213
213	5374	CIRB	XIX	3244/17.4	0	10453	0	2250	0	8203
214	5427	CIRB	XX	3371/15.3	0	3750	0	3090	0	660
215	7584	NDRI	XX	3600/16.5	0	2750	0	1820	0	930
216	7649	NDRI	XX	3203/13.5	0	2750	0	1810	0	940
217	2814	GAD	XX	3430/23.4	0	400	0	100	0	300
218	2848	GAD	XX	3304/20.5	0	880	0	860	0	20
219	2850	GAD	XX	3683/20.6	0	350	0	100	0	250
220	3004	GAD	XX	4716/26.2	0	685	0	620	0	65
221	5405	CIRB	NS	3179/16.1	0	500	0	0	0	500
222	2793	GAD	XX	3339/21.5	0	220	0	150	0	70
223	2831	GAD	XX	4814/28.7	0	220	0	150	0	70
224	1454	LUVAS	XX	3355/17.4	0	330	0	310	0	20
			Total		**291721**	**107864**	**44074**	**31113**	**85**	**324313**
	Non-set/Field bulls				Opening B.	Received	Sold	Supply	Exp.	Balance
1	M-188	CIRB	NS	4100	620	0	0	0	0	620
2	Yuvraj	PVT	Field		17	0	0	0	0	17
3	Heera	PVT	Field		50	0	0	0	0	50
4	Dhanna	PVT	Field		100	0	0	0	0	100
5	Ramu Haria	Sirsa	cow bull		223	0	0	0	0	223
	Total				1010	0	0	0	0	1010
				Overall Total	**292731**	**107864**	**44074**	**31113**	**85**	**325323**

Summary Report (2021-22)

Sr. No.	Brief Information	2021-22	2020-21	2019-20
1	Opening balance on 1st April	394070	373330	393017
2	Semen Production up to March	178673	129334	80279
3	Semen doses received	22855	9267	920
4	Semen doses supplied NPBI	31113	25389	4720
5	Semen doses sold up to March	131968	94320	138906
6	Semen doses used for Experiment	85	359	8
7	Closing Balance	432432	394325	383757

9.11 Average Body weight (kg) since inception (Indicate number of animals in parenthesis) : NA

9.12 Production Performance during 1st April 2021 to 31st March 2022

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	63	2691.92±83.29	308.86±6.44	2575.48±64.48	12.13±0.23
2nd	42	3063.31±101.11	299.38±7.99	2975.60±82.12	15.25±0.29
3rd	18	3222.11±160.46	282.83±10.14	3185.78±147.82	17.09±0.62
4th	12	3115.58±271.06	288.75±19.20	3007.17±210.74	16.36±0.73
5th & above	18	3208.89±205.31	307.00±14.34	3094.72±146.10	16.07±0.56
Overall	153	2950.29±59.66	301.40±4.29	2852.06±48.96	14.37±0.23

9.12.1 Production Performance of Buffaloes since Inception of Network

Year	Av. Lact. Yield (Kg)	Av. Lact. Length (days)	305-day Lact. Milk Yield (Kg)	Av. Peak yield (Kg)
1991-92	1761 ± 77 (154)	374 ± 9 (154)	1552 ± 60 (154)	-
1992-93	1804 ± 48 (137)	395 ± 8 (137)	1508 ± 34 (137)	7.46
1993-94	1980 ± 58 (148)	419 ± 7 (148)	1686 ± 46 (148)	8.20
1994-95	1930 ± 37 (206)	334 ± 5 (206)	1787 ± 0 (206)	8.89
1995-96	1936 ± 47 (147)	313 ± 7 (147)	1855 ± 42 (147)	9.40
1996-97	1879 ± 51 (173)	313 ± 7 (173)	1775 ± 45 (173)	-
1997-98	1784 ± 44 (123)	304 ± 6 (123)	1688 ± 37 (123)	-
1998-99	1762 ± 36 (153)	284 ±1 6(153)	1702 ± 33 (153)	-
1999-00	2138 ± 38 (141)	313 ± 4 (141)	2042 ± 31 (141)	-
2000-01	1997 ± 41 (173)	306 ± 9 (173)	1914 ± 36 (173)	9.68
2001-02	1954 ± 40 (152)	290 ± 4 (152)	1898 ± 35 (152)	9.71
2002-03	1987 ± 39 (148)	303 ±5 (148)	1902 ± 32 (148)	9.20
2003-04	1910 ± 37 (148)	299 ± 5 (148)	1837 ± 31 (148)	9.18
2004-05	2017 ± 40 (167)	319 ± 5(167)	1886 ± 33 (167)	9.33 ± 0.16
2005-06	2047 ± 45 (149)	321 ± 5(149)	1921 ± 38 (149)	8.76 ± 0.19
2006-07	1994.9 ± 37 (170)	322 ± 4 (170)	1882 ± 32 (170)	9.23 ± 0.15
2007-08	1954 ± 38.02 (127)	299 ± 4 (127)	1891 ± 34 (127)	9.72 ± 0.19
2008-09	2076 (138)	325 (138)	1926 (138)	9.50 (138)
2009-10	2285 (102)	361 (102)	1995 (102)	9.54 (102)
2010-11	2471 (113)	337 (113)	2247 (113)	10.48 (113)
2011-12	2598 (116)	338 (116)	2374 (116)	12.29 (116)
2012-13	2478.0 ± 54.36 (110)	318±6.14 (110)	2335 ± 45.71 (110)	11.23 ± 0.23 (110)
2013-14	2394.0 ± 44.16 (98)	333 ± 6.92 (98)	2291 ± 58.25 (98)	11.03 ± 0.19 (098)
2014-15	2501.72± 60.17 (110)	313.05 ± 5.57 (110)	2354.65 ± 47.55 (110)	11.26 ± 0.17 (110)
2015-16	2483.1 ± 43.68 (152)	322.19 ± 4.91 (152)	2336.06 ± 33.36 (152)	11.17 ± 0.15 (152)
2016-17	2567.0 ± 49.75 (133)	312.00 ± 4.44 (133)	2457.00 ± 39.61 (133)	12.22 ± 0.15 (133)
2017-18	2480.38±55.06 (140)	294.98±3.62 (140)	2423.79±48.86 (140)	12.74±0.23 (140)
2018-19	2640.56± 56.76 (123)	304.63 ± 3.83 (123)	2566.96 ± 49.21 (123)	13.36 ± 0.24 (123)
2019-20	2732.47± 59.27 (128)	300.02 ± 4.46(128)	2648.39 ± 52.53 (128)	13.90 ± 0.21 (128)
2020-21	2843.04 ± 50.25 (148)	307.78 ± 4.27 (148)	2730.30 ± 41.52 (148)	13.32 ± 0.19 (148)
2021-22	**2950.29 ± 59.66 (153)**	**301.40 ±4.29 (153)**	**2852.06 ± 48.96 (153)**	**14.37 ± 0.23 (153)**

9.13 Average Milk Composition from April 2021 to March 2022

Month	No. of Animals (N)	Fat %	Protein %	SNF %	Lactose %	Total Solid%
April, 21						
May, 21						
June, 21						
July, 21						
August, 21						
September, 21	58	7.32	3.75	10.22	5.61	17.54
October, 21	132	7.73	3.67	10.01	5.48	17.74
November, 21	119	7.72	3.58	9.8	5.36	17.52
December, 21	114	7.82	3.40	9.3	5.07	17.12
January, 22	120	7.84	3.46	9.33	5.1	17.17
February, 22	127	8.43	3.55	9.69	5.33	18.09
March, 22	113	8.37	3.67	10.0	5.49	18.37
Overall	112	7.92	3.57	9.73	5.33	17.65

9.14: Reproductive Performance 2021-22

Lactation / Parity	N	AFC (Months)	SP (Days)	DP (Days)	CI (Days)
1st	67	38.61±0.82	--	--	--
2nd	43	--	157.21±13.01	135.37±9.28	461.98±13.07
3rd	26	--	95.46±12.08	112.50±8.15	403.15±12.53
4th	12	--	135.08±27.81	130.00±19.75	446.08±27.52
≥5th	18	--	116.00±18.93	**122.06±13.75**	426.78±18.61
Over all	**166**	**38.61±0.82 (67)**	**130.82±8.36 (99)**	**126.29±5.72 (99)**	**438.20±8.35 (99)**

9.14.1 Reproduction Performance of Buffaloes Since inception of Network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
1991-92	51.0 ± 0.8 (26)	236±11 (108)	138±6 (74)	502±12 (74)
1992-93	50.7 ± 1.5 (27)	304±15 (96)	132±7 (42)	489±16 (42)
1993-94	59.1 ± 1.6 (48)	312±12 (158)	230±14(161)	625±1 (161)
1994-95	55.3 ± 1.3 (48)	202±15 (105)	180±12(113)	527±10 (116)
1995-96	51.5±1.5 (22)	193±10 (149)	186±7 (149)	501±9 (152)
1996-97	47.6±1.0 (23)	182±10 (149)	204±7 (173)	473±9 (152)
1997-98	45.5±0.5 (49)	175±14 (106)	203±11 (118)	491±10 (118)
1998-99	50.0±0.1 (57)	137±9 (121)	159±14 (126)	455±10 (126)
1999-00	46.2±1.0 (54)	138±9 (104)	142±7 (120)	451±8 (120)
2000-01	46.2±1.2 (45)	146±9 (151)	153±7 (154)	454±9 (154)
2001-02	49.8 ± 0.8 (51)	146 ± 11 (125)	158±8 (135)	456±11 (135)
2002-03	47.83 ± 0.51 (61)	133 ± 9 (126)	143±6 (128)	440±9 (130)
2003-04	50.52 ± 0.84 (77)	151 ± 10 (142)	147±7 (149)	458 ± 10 (151)
2004-05	48.18 ± 0.82 (76)	111 ± 7 (100)	134±6 (100)	426 ± 7 (101)
2005-06	47.89 ± 0.73 (76)	184 ± 12 (112)	168±8 (117)	499 ± 12(117)
2006-07	46.90 ± 1.06 (43)	183 ± 10.11 (113)	178±8 (116)	495 ± 10 (116)
2007-08	48.27 ± 0.64	159 ± 11.55	177 ± 9.26	482 ± 12.06
2008-09	47.66 ± 0.97 (44)	171 ± 12.31 (80)	160 ± 10.50 (85)	469 ± 12.20 (85)
2009-10	49.22 ± 0.75 (51)	212 ± 16.64 (77)	170 ± 12.99 (77)	520 ± 16.21 (77)
2010-11	49.92 ± 1.04 (35)	186 ± 13.74 (80)	157 ± 10.47 (83)	492 ± 13.96 (83)
2011-12	51.91 ± 0.98 (37)	181 ± 13.24 (80)	155 ± 8.63 (81)	485 ± 12.65 (81)
2012-13	44.48 ± 1.42 (37)	174 ± 11.53 (72)	153 ± 8.19 (72)	481 ± 11.87 (73)
2013-14	45.62 ± 10.78 (37)	190 ± 11.27 (86)	170 ± 9.77 (85)	495 ± 11.64 (87)
2014-15	42.84 ± 0.79 (61)	168.43 ± 8.31 (88)	149.33 ± 6.46 (88)	472.92 ± 8.45 (88)
2015-16	44.96 ± 1.23 (24)	138.39 ± 7.39 (111)	140.78 ± 5.52 (111)	449.26 ± 7.43 (111)
2016-17	44.91 ± 0.81 (38)	148.75 ± 9.01 (93)	142.52 (93) ± 6.44	457.83 ± 8.82 (93)
2017-18	43.58 ± 0.67 (67)	167.32 ± 9.82 (101)	162.42 ± 7.54 (101)	477.75 ± 9.87 (101)
2018-19	45.76 ± 0.80 (31)	136.35 ± 6.98 (97)	151.39 ± 6.41 (97)	446.25 ± 7.08 (97)
2019-20	43.62 ± 0.80(71)	143.19 ± 8.29 (90)	145.73 ± 7.24 (90)	450.71 ± 8.49 (90)
2020-21	42.48 ± 0.73 (71)	126.95 ± 7.29 (100)	126.79 ± 5.61 (100)	436.78 ± 7.43 (100)
2021-22	**38.61 ± 0.82 (67)**	**130.82 ± 8.36 (99)**	**126.29 ± 5.72 (99)**	**438.20 ± 8.35 (99)**

9.15 Month wise Milk Production and Disposal during the Period 01/04/2021 to 31/03/2022

Month	Total milk produced (kg)	Disposal(Kg)		
		Milk Sold	Calf feeding	Expt.
April, 2021	38130.00	33137.00	4993.00	--
May	37092.00	32194.00	4898.00	--
June	36688.00	31765.50	4922.50	--
July	39525.00	34330.50	5194.50	--
August	40080.00	33374.50	6705.50	--
September	41862.00	34207.50	7654.50	--
October	42737.50	34897.00	7840.50	--
November	41488.00	33483.00	8005.00	--
December	43173.00	35851.50	7321.50	--
January, 2022	42625.50	35831.00	6794.50	--
February	39206.00	32846.50	6359.50	
March	41779.50	34930.00	6849.50	
Total	484387.00	406848.00	77538.50	--

9.16 Feed and Fodder purchased and offered to animals during the year 2021-22

Quarter	Type of Fodder	OB	Produced at CIRB	Qty. Purchased	Actually Fed.	Balance
I	Green	--	8859.00	--	8859.00	--
	Dry	1875.00	927.20	4424.00	1726.20	5500.00
	Silage	--	--	--	--	--
	Sugar beet	--	--	423.80	330.00	93.80
	pulp	--	1704.96	--	1704.96	--
	Concentrate					
II	Green	--	9998.30	--	9998.30	--
	Dry	5500.00	--	--	1385.00	4115.00
	Silage	--	--	--	--	--
	Sugar beet	93.80	--	427.60	93.80	427.60
	pulp	--	1712.20	--	1712.20	
	Concentrate					
III	Green	--	2364.85	--	2364.85	--
	Dry	4115.00	--	--	2300.00	1815.00
	Silage	--	--	1140.25	724.00	416.25
	Sugar beet	427.60	--	--	427.60	--
	pulp	--	1781.95	--	1781.95	--
	Concentrate					
IV	Green	--	11584.50	--	11584.50	--
	Dry	1815.00	--	--	545.00	1270.00
	Silage	416.25	--	279.25	695.50	--
	Sugar beet	--	--	456.2.	140.00	316.20
	pulp	--	1674.17	--	1674.17	--
	Concentrate					
Total	Green	--	32806.65	--	32806.65	--
	Dry	1875.00	927.20	4424.00	5956.20	1270.00
	Silage	--	--	1419.50	1419.50	--
	Sugar beet	--	--	1307.60	991.40	316.20
	pulp	--	6873.28	--	6873.28	--
	Concentrate					

9.17 Milking performance 1st April 2021 to 31st March 2022

Month	Buffaloes in Milk	Dry Buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 21	132	42	174	76	9.60	7.25
May 21	121	45	166	73	9.85	7.23
June 21	122	48	170	72	10.04	7.22
July 21	124	49	173	72	10.30	7.40
August 21	128	54	182	70	10.11	7.16
September 21	137	57	194	71	10.27	7.24
October 21	140	61	201	70	9.86	6.87
November 21	134	52	186	72	10.26	7.33
December 21	135	49	184	73	10.38	7.59
January 22	135	46	181	74	10.24	7.59
February 22	137	49	186	73	10.27	7.57
March 22	139	50	189	73	9.71	7.16
Overall	**132**	**50**	**182**	**72**	**10.07**	**7.29**

9.17.1 Milking performance since inception

Year	Animal in Milk	No. of Animal dry	Total Animal	% in Milk	Wet Av. (kg)	Herd Av. (kg)
1991-92	182	147	329	55.3	4.70	2.61
1992-93	165	111	276	60.60	4.80	2.83
1993-94	153	125	178	55.00	5.65	3.10
1994-95	181	85	266	68.10	6.09	4.15
1995-96	153	82	235	65.19	6.43	4.19
1996-97	122	83	205	59.56	5.62	3.35
1997-98	121	76	197	61.38	6.12	3.75
1998-99	133	73	206	64.52	6.77	4.37
1999-00	137	72	209	65.48	6.85	4.49
2000-01	148	78	226	65.39	6.68	4.37
2001-02	147	70	217	67.70	6.59	4.46
2002-03	143	71	214	67.00	6.27	4.20
2003-04	151	72	223	67.69	6.49	4.39
2004-05	154	69	224	68.97	6.39	4.40
2005-06	151	77	238	66.37	6.57	4.36
2006-07	137	92	229	59.81	6.45	3.86
2007-08	146	71	217	67.32	6.64	4.47
2008-09	133	66	199	66.00	6.50	4.35
2009-10	106	65	171	62.00	7.01	4.35
2010-11	109	64	173	62.97	7.45	4.69
2011-12	110	58	168	65.38	7.83	5.12
2012-13	109	69	178	62.24	7.74	4.76
2013-14	105	65	170	61.78	8.01	4.95
2014-15	116	50	166	69.97	8.25	5.77
2015-16	114	62	176	65	8.04	5.21

2016-17	110	57	167	66	8.08	5.32
2017-18	115	54	169	67.8	8.71	5.90
2018-19	101	54	155	65	8.92	5.80
2019-20	124	48	172	72	9.66	6.94
2020-21	130	50	180	72	9.91	7.15
2021-22	**132**	**50**	**182**	**72.42**	**10.07**	**7.29**

9.18: Bull wise daughters born during 2021-22

Sr. No.	Bull No.	Set No.	Daughter born
1	1208	18	5
2	1209	18	1
3	1219	18	1
4	2674	18	3
5	2737	19	8
6	2759	19	3
7	5181	19	9
8	5232	19	14
9	5246	19	8
10	5310	19	5
11	5320	19	4
12	5333	19	2
13	5374	19	4
14	7604	19	2
15	2269PT	13	2
16	2357PT	14	2
17	4196PT	14	9
18	6044PT	14	5
Total			**87**

9.19 Bull wise daughters completing 1st lactation in 2021-22

Sr No	Bull No	Daughter No	D.O.B.	D.O.C.	AFC (Month	Lact. Length (Days)	TLMY (kg)	SLMY (KG)
1.	4354 PT	5081	27-08-16	20-05-20	44.78	324	3184	3112
2.	2371	5109	19-10-16	12-06-20	43.79	301	2566	2566
3.	1027	5203	13-06-17	30-07-20	37.58	260	2734	2734
4.	3267 PT	5170	08-03-17	11-08-20	41.16	248	2122	2122
5.	2501	5228	03-08-17	25-06-20	34.75	295	2577	2577
6.	6409	5251	27-08-17	13-09-20	36.59	216	1590	1590
7.	4438	5032	09-03-16	10-10-20	55.10	192	1579	1579
8.	2383	5214	18-07-17	28-07-20	36.36	266	1807	1807
9.	1153 PT	5249	24-08-17	26-08-20	36.10	237	2090	2090
10.	6405	5062	23-06-16	17-07-20	48.82	287	2554	2554
11.	4889	5126	13-11-16	25-04-20	41.39	384	3345	2939
12.	4354 PT	5021	17-02-16	02-08-20	53.52	292	3573	3573
13.	4403	5048	22-04-16	31-12-19	44.32	514	5003	3540

14.	4705	5148	02-01-17	21-08-20	43.63	294	2252	2252
15.	2501	5208	08-07-17	18-10-20	39.39	250	1763	1763
16.	4889	5125	11-11-16	06-08-20	44.84	344	3273	3087
17.	NK	E195	11-06-17	22-06-20	36.39	396	3251	2718
18.	NK	E192	17-05-17	22-09-20	40.24	311	2301	2283
19.	2501	5175	14-03-17	29-08-20	41.56	335	2942	2746
20.	M-29	5158	21-01-17	05-09-20	43.50	328	3265	3136
21.	1354 PT	5241	14-08-17	25-10-20	38.40	278	2472	2472
22.	6405	5063	26-06-16	08-08-20	49.45	363	2870	2589
23.	6409	5253	30-08-17	11-10-20	37.41	299	2346	2346
24.	6139	5140	06-12-16	18-09-20	45.44	329	3386	3217
25.	2467	5162	29-01-17	18-10-20	44.65	306	3006	3002
26.	4889	5262	15-09-17	30-10-20	37.51	294	2404	2404
27.	4324	5132	21-11-16	02-12-20	48.39	261	2725	2725
28.	NK	E194	01-04-17	05-11-20	43.20	316	2904	2857
29.	2467	5225	29-07-17	19-12-20	40.73	272	2876	2876
30.	M-51	5342	18-02-18	08-01-21	34.68	266	2029	2029
31.	NK	E186	23-03-17	12-10-20	42.71	361	3362	3018
32.	6139	5074	01-08-16	25-11-20	51.85	317	3885	3811
33.	4705	5288	09-11-17	09-12-20	37.02	303	2501	2501
34.	NK	E187	30-07-17	21-12-20	40.77	298	2377	2377
35.	M-29	5270	27-09-17	28-10-20	37.05	359	3581	3255
36.	4705	5281	01-11-17	04-11-20	36.13	359	2907	2637
37.	3267 PT	5164	21-02-17	26-01-21	47.18	283	2598	2598
38.	2429	5019	08-02-16	12-12-20	58.16	335	2838	2730
39.	2383	5285	07-11-17	27-12-20	37.68	320	2206	2139
40.	NK	E197	21-06-17	04-03-21	44.45	253	2042	2042
41.	3591 PT	5179	24-03-17	07-10-20	42.51	401	4752	4073
42.	3267 PT	5165	26-02-17	20-10-20	43.79	388	3007	2599
43.	6379	5173	14-03-17	08-01-21	45.90	308	2709	2700
44.	2501	5313	29-12-17	05-03-21	38.20	266	1817	1817
45.	2383	5213	16-07-17	29-12-20	41.49	339	2335	2197
46.	NK	E190	21-03-17	26-02-21	47.28	280	2002	2002
47.	6379	5294	10-12-17	26-12-20	36.56	349	2555	2426
48.	2501	5209	09-07-17	26-01-21	42.64	325	2923	2841
49.	6409	5326	27-01-18	28-02-21	37.08	292	2353	2353
50.	M-51	5257	06-09-17	14-01-21	40.31	344	2990	2754
51.	NK	E196	15-07-17	17-02-21	43.17	310	2388	2368
52.	2501	5274	06-10-17	29-12-20	38.79	367	3208	2886
53.	R-12	5354	21-04-18	09-01-21	32.68	356	3569	3256
54.	M-51	5224	29-07-17	21-02-21	42.84	313	2840	2800
55.	4889	5263	19-09-17	06-04-21	42.58	269	2191	2191
56.	6409	5327	29-01-18	12-05-21	39.42	240	1652	1652
57.	1053	5340	14-02-18	13-03-21	36.92	321	2466	2408
58.	4889	5269	26-09-17	08-04-21	42.41	295	2431	2431
59.	Sikander	5364	28-06-18	22-02-21	31.89	347	2871	2662

60.	R-10	5309	22-12-17	16-04-21	39.81	294	2613	2613
61.	M-53	5108	18-10-16	21-04-21	54.12	289	2350	2350
62.	6379	5347	20-03-18	11-06-21	38.76	273	2347	2347
63.	2383	5277	18-10-17	22-07-21	45.14	246	2136	2136

9.20: Breeding bulls for test mating (19th & 20th Set from CIRB Unit)

Bull no.	D.O.B.	Dam No.	Sire No.	Dam's Best Yield / PY (kg)	Parity
Set 19th					
1315 (LUVAS)	18/11/16	708	2045 PT X	3824/18.4	4
2674 (GADVASU)	01/03/16	2532	2412 Set XV	3583/23.0	1
2737 (GADVASU)	04/08/17	2543	2383 Set XVI	3241/22.8	3
2759 (GADVASU)	09/11/17	2502	2133 PT XI	3340/20.7	3
5181 (CIRB)	11/04/17	4340	3591 PT XI	3428/17.9	4
5232 (CIRB)	06/08/17	4322	1354 PT III	3568/17.0	5
5246 (CIRB)	20/08/17	4672	4371 PT V	3124/15.7	2
5310 (CIRB)	23/12/17	4545	6646 XVI	4069/21.0	3
5320 (CIRB)	15/01/18	4017	1053 XVI	3340/15.2	4
5333 (CIRB)	02/02/18	3485	1053 XVI	3304/17.6	5
5374 (CIRB)	12/07/18	4344	1148 XVII	3244/17.4	3
7604 (NDRI)	18/06/18	6477	7010 XVII	3158/16.0	2
Set 20th					
5427 (CIRB)	10/11/18	3633	2594 XVII	3371/15.3	4
7584 (NDRI)	30/03/18	6147	6253 Non Set	3600/16.5	2
7649 (NDRI)	15/10/18	6735	2558 XVII	3203/13.5	1

9.20.1: P T Bulls for nominated mating (2021 on ward)

Sr. No	Bull No.	Institute	DoB	Dam No.	Sire No.	Dams' Best yield	Sire Index	Superiority (%)
1	2269 Set 13	GADVASU	17/12/08	2295	3631 Set X	3617	2619	+13.86
2	2357 Set 14	GADVASU	24/07/10	P2488	1933 PT Set VI	3559	2487	+2.78*
3	3591 Set 11	CIRB	29/05/06 (Purchased)	3590	Not Known	2598	2177	+0.14*
4	4196 Set 14	CIRB	10/05/10	3586	1153 PT Set VI	3304	2474	+2.27*
5	4354 Set 15	CIRB	05/09/11	P4353	Not Known	3528	2589	+1.67*
6	6007 Set 15	NDRI	15/06/08	5231	5396 Set X	3260	2588	+1.61*
7	6044 Set 14	NDRI	15/01/09	430	4371PT Set V	3567	2479	+2.43*

***** BLUP Method

9.20.2 Bulls selected for 19th set (CIRB Unit)

Sr. No.	Bull no.	D.O.B.	Dam No.	Sire No.	Dam's Best Yield (305 day or less days) kg	Highest yield/ Peak yield
1	5414	03/10/18	4593	4998 Clone Non-Set	2708,**3321**,3025, 3177	3321/19.0
2	5427	10/11/18	3633	2594 Set 17	2726,2300,3241,**3371**, 3025,3211, 3014	3371/15.3
3	5473	22/03/19	4458	R-25 Field	3044,3631,3571,**4028**	4028/17.0
4	5462	13/02/19	4479	Sikander Set 17	2851,2837,3118,**3204**	3204/18.7
5	5465	23/02/19	4713P	M-53 Set 17	NK,NK,867,2084,3064, 2695,**3257**, 2845,2075	3257/16.5
6	5466	24/02/19	4369	M-53 Set 17	2068,2816,**3297**,2785, 2788,3196	3297/15.3
7	5467	27/02/19	4197	B1/330 Set 17	2209,2891,2760,2854, 3112,**3184**, 2582	3184/17.3
8	5481	29/03/19	4621	4733 Set 17	2002,1455,**3332**	3332/16.6
9	5500	15/07/19	4934	1148 Set 17	2888,**3171**	3171/16.5
10	5505	22/07/19	4251	Dara Set 17	2407,3184,**4138**,3784	4138/22.0
11	5511	27/07/19	4800	1148 Set 17	2612, **3356**,3262	3356/17.4
12	5579	03/10/19	4672	Dhanna Field	2166,**3124**,2828	3124/15.7
13	5588	15/10/19	4899	4687 Set 17	3505,**4216**,	4216/18.9
14	5592	21/10/19	4241	Heera Field	2387,3232,2663,2949, 3192,**3242**	3242/17.0

All Bulls are negative for TB, JD, Brucellosis, IBR, BVD, Tricomonas and BGC

9.20.3 Bulls selected for 20th set (CIRB Unit)

Sr. no.	**Bull no.**	**Location**	**D.O.B.**	**Dam no.**	**Sire no.**	**Dam's All Lact Milk Yield (305 or less days) kg**	**Highest Yield/ Best Peak Yield**
1.	19	LUVAS	29/10/18	777	M-51 XVII	2641, 3242, **3695,** 3663	3695/21.6
2.	1454	LUVAS	19/06/18	976	M-51 XVII	2965, 3288, 3085, **3355**	3355/17.4
3.	2793	GADVASU	06/07/18	2788	2467 XVI	2971, **3339**	3339/21.5
4.	2814	GADVASU	03/09/18	2905	2565 XVII	2566, 3045, **3675**	3675/23.4
5.	2831	GADVASU	11/10/18	2897	Virat Field	1577, 3049, 4025, **4814**	4814/28.7
6.	2838	GADVASU	02/11/18	2502	1354 PT III	1834, 3192, **3340,** 3288, 2850, 3257, 2107	3340/22.7
7.	2848	GADVASU	22/12/18	2808	2558 XVII	1625, **3304**	3304/20.5
8.	2850	GADVASU	25/01/19	2973	2594 XVII	2623, **3683**	3683/20.6
9.	3004	GADVASU	13/10/16	Laado	Rustam Field	4716	4716/26.2
10.	5427	CIRB	10/11/18	3633	2594 XVII	2726,2300,3241,**3371**, 3025,3211, 3014	3371/15.3
11.	5481	CIRB	29/03/19	4621	4733 XVII	2002,1455,**3332**	3332/16.6
12.	5500	CIRB	15/07/19	4934	1148 XVII	2888,**3171**	3171/16.5
13.	5505	CIRB	22/07/19	4251	Dara XVII	2407,3184,**4138**,3784	4138/22.0
14.	5511	CIRB	27/07/19	4800	1148 XVII	2612, **3356**,3262	3356/17.4
15.	5588	CIRB	15/10/19	4899	4687 XVII	3505,**4216**,	4216/18.9
16.	5592	CIRB	21/10/19	4241	Heera Field	2387,3232,2663,2949, 3192,**3242**	3242/17.0
17.	7584	NDRI	30/03/18	6147	6253 Non-Set	2435, **3600**	3600/16.5
18.	7649	NDRI	15/10/18	6735	2558 XVII	**3203,** 2755	3203/13.5

Bulls from sr. no. 10 - 16 are negative for TB, JD, Brucellosis, IBR, BVD, Trichomoniasis and Campylobacteriosis

Table 9.20.4 Future Breeding bulls (CIRB Unit)

Sr. no.	Bull no.	D.O.B.	Dam no.	Sire no.	Dam's All Lact Milk Yield (305 or less days) kg	Highest Yield/ Best Peak Yield
1.	5620	14/01/20	5066	4995 Set 18	3275, **3642**	3642/17.0
2.	5626	23/01/20	4622	1150 Set 18	2328,**3791,**3417**,** In Milk	3791/20.0
3.	5629	29/01/20	4613	2645 Set 18	2475,3501,**4043,** In Milk	4043/20.2
4.	5636	19/02/20	3485	2269 PT Set 13	1916,2868,3073,2868, **3304**,2555,3211, 2780, 3118, 2785, 341 (Auct)	3304/17.6
5.	5638	24/02/20	5223	2234 PT Set 13	**3364,** In Milk	3364/19.2
6.	5647	31/03/20	4462	2185 PT Set 12	2566,**4045,**2505,2610 In Milk	4045/23.4
7.	5650	04/04/20	4504	1198 Set 18	2343,2870,2461,**3342,** 3156	3342/17.3
8.	5668	31/05/20	4372	2269 PT Set 13	2413,2598,2766,2714, 3124,3282, **3595**	3595/18.5
9.	5671	14/06/20	4235	7263 Set 18	2874,3169,**3533**,3009**,** 2940 (Auct)	3533/16.9
10.	5682	27/07/20	4767	4995 Set 18	2468,3697,**4268,** In Milk	4268/20.6
11.	5686	30/07/20	4978	2234 PT Set 13	3874,**4366**	4366/18.9
12.	5690	02/08/20	5021	4905 Set 18	3573,**4030**	4030/21.0
13.	5710	05/09/20	5158	7227 Set 18	**3136,** In Milk	3136/19.0
14.	5713	14/09/20	4572	2269 PT Set 13	2427,**3678**,3099 (Auct)	3678/20.1
15.	5723	07/10/20	5179	7094 Set 18	**4073,** In Milk	4073/26.8
16.	5730	12/10/20	E186	2676 Set 18	**3018**	3018/12.7
17.	5756	13/11/20	4724	183 PT Set 13	2810,3222,**3646**, In Milk	3646/20.7
18.	5764	22/11/20	4989	4905 Set 18	2708,**3616,** In Milk	3616/16.5
19.	5771	11/12/20	4916	2676 Set 18	3138,**3777,** In Milk	3777/18.2
20.	5776	24/12/20	4933	2645 Set 18	2341,3006,**3764,** In Milk	3764/20.0
21.	5780	29/12/20	5274	2645 Set 18	**2886**	2886/13.5
22.	5791	15/01/21	4817	183 PT Set 13	2606,**4250**,4201**,** In Milk	4250/23.5
23.	5795	28/01/21	4199	4995 Set 18	2107,3117,2743,3008, **3200**, 2713, 2724 (Auct)	3200/19.0
24. +	5800	11/02/21	4605	183PT Set 13	3175,4168,3375,**4177,** In Milk	4177/20.0
25.	5806	23/02/21	4633	183 PT Set 13	1898,**3298**,2901,2632, In Milk	3298/16.3
26.	5814	19/03/21	4251	183 PT Set 13	2407,3184,**4138**,3784, 2913	4138/22.0
27.	5815	21/03/21	5017	7147 Set 18	2900,**3417**	3417/16.5
28.	5824	21/04/21	4219	2357 PT Set 14	2121,3028,3374,2793, **3719**,3653, 2520	3719/17.5
29.	5825	22/04/21	5330	1219 Set 18	**2934**	2934/13.0
30.	5829	09/05/21	5005	5181 Set 19	2544, **3154**	3154/19.5
31.	5831	15/05/21	5092	5232 Set 19	2956, **3340**	3340/18.0
32.	5835	02/06/21	5353	5232 Set 19	3182,	3182/13.0
33.	5839	10/06/21	4504	5181 Set 19	2343,2870,2461,**3342,** 3156	3342/17.3
34.	5841	20/06/21	5096	2357 PT Set 14	2928, **3505**	3505/17.5
35.	5842	23/06/21	5066	4196 PT Set 14	3275, **3642**	3642/17.0
36.	5864	29/07/21	4709	6044 PT Set 14	2673,**3259**,2921**,** 3590	3259/21.0
37.	5872	09/08/21	4235	6044 PT Set 14	2874,3169,**3533**,3009**,** 2940 (Auct)	3533/16.9
38.	5875	14/08/21	5021	2759 Set 19	3573,**4030**	4030/21.0
39.	5897	20/09/21	4692	6044 PT Set 14	2795,3261,**3578**, In Milk	3578/16.0
40.	5912	16/10/21	4899	6044 PT Set 14	3505,**4216**, In Milk	4216/20.0
41.	5918	25/10/21	4479	6044 PT Set 14	2851,2837,3118,**3204**, 1403	3204/18.7
42.	5920	02/11/21	5162	5320 Set 19	**3002**, In Milk	3002/13.5
43.	5924	04/11/21	4089	6044 PT Set 14	2370,2691,2908,3036,27553056,3047, **3302**, 1621(Auct)	3302/15.5

44.	5931	29/11/21	4448	5320 Set 19	2575,3193,**3252**,2200, In Milk	3252/16.9
45.	5935	03/12/21	4767	4196 PT Set 14	2468,3697,**4268,** In Milk	4268/20.6
46.	5941	23/12/21	4517	4196 PT Set 14	2416,2723,3077,**3511,** In Milk	3511/21.5
47.	5949	10/01/22	4298	2269 PT Set 13	2300,3227,3229,2758, 3061,**3506,** Auct	3506/17.5
48.	5959	23/01/22	4593	2269 PT Set 13	2708,**3321**,3025**,**3177, In Milk	3321/19.0
49.	5968	22/02/22	4916	5246 Set 19	3138,**3777,** In Milk	3777/18.2
50.	5969	24/02/22	4776	5310 Set 19	2535,2626,**3354**, In Milk	3354/15.8

Table 9.21 A: No. of Elite animals having 305 DLMY ≥ 3000 kg

Sr. No.	305 DLMY groups	No. of elite buffalo	
		2020-21	2021-22
1	3000 to 3500 kg	45	52
2	3500 to 4000 kg	15	19
3	≥ 4000 kg	08	12
Total		**68**	**83**

9.21: Accomplishment and Targets Achieved

Sr. No.	Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
1	Av. age at first calving (Months)	40.0 months	43.09 ± 0.64 (68)	45.76±0.80 (31)	43.62 (71)	42.48 (71)	**38.61 (67)**
2	Av. service period (Days)	130 days	169.03 ± 9.89 (103)	136.35±6.98 (97)	143.19 (90)	127 (100)	**131 (99)**
3	Calf mortality (0-3 months)	≤ 3 %	6.96 %	13.94 %	6.96 %	2.63 %	**3.23 %**
4	Wet average (Kg)	≥ 8.50 kg	8.71 kg	8.92 kg	9.66 kg	9.91 kg	**10.07**
5	Herd average (Kg)	≥ 5.50 kg	5.90 kg	5.80 kg	6.94 kg	7.15 kg	**7.29**

11. Achievements and summary:

Herd Strength: The overall herd strength of Murrah buffalo in March 2022 was 576, which included 273 breedable buffaloes, 148 suckling calves (< 1 year), 128 young males and females (1-2 years), 81 heifers (> 2.0 years) and 27 breeding males (>2.0 years).

Mortality: During the period April 21 to March 2022 calf mortality (0-3 month) was reported 3.23 percent.

Milk Production Performance: The overall wet average and herd average were reported 10.07 and 7.29 kg, respectively. The overall 305 days lactation milk yield and total lactation milk yield during April 21 to March 2022 was reported 2852 and 2950 kg, respectively. During the period under report 153 buffaloes completed their lactation.

Reproductive Performance: The overall conception rate during January to December 21 was reported 46.83 %. The other reproductive traits viz. Age at first calving, service period and calving interval were observed 38.61 months, 131 days and 438 days, respectively for buffaloes calved during April 21 to March 2022.

Semen Production and Dissemination: A total 178,673 semen doses frozen at CIRB Lab during April 21 to March 2022. A total of 31,113 doses of frozen semen were supply in NPBI and 131,968 frozen semen doses sold during the period under report.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC		Balance
Total	ICAR Share		ICAR Share	State Share	
33.50	33.50	33.50	33.50	0.00	0.00

Herd Performance

Herd Strength: The overall herd strength of Murrah buffalo in March 2022 was 576, which included 273 breedable buffaloes, 148 suckling calves (< 1 year), 128 young males and females (1-2 years), 81 heifers (> 2.0 years) and 27 breeding males (>2.0 years).

Mortality: During the period April 21 to March 2022 calf mortality (0-3 month) was reported 3.26 percent, which is approximately within the fixed traget.

Milk Production Performance: The overall wet average and herd average during April 2021 to March 2022 were reported **10.07** and **7.29** kg, respectively. The overall 305 days lactation milk yield and total lactation milk yield during April 21 to March 2022 was reported **2852** and **2950** kg, respectively which is improved 4.47 % and 3.76 % as compared to previous year performance. During the period under report 153 buffaloes completed their lactation.

Reproductive Performance: The overall conception rate during January to December 21 was reported 46.83 %. The other reproductive traits viz. Age at first calving, service period and calving interval were observed 38.61 months, 131 days and 438 days, respectively for buffaloes calved during April 21 to March 2022. The AFC (38.61 months) was reported lower (3.87 months @ -9.11%) as compared to previous year performance (42.48 months). Total 170 calving reported which involved 67 first calvers during the period under report.

Semen Production and Dissemination: Total 178673 semen doses frozen at CIRB Lab during April 2021to March 2022. A total of 31113 doses of frozen semen were supply in NPBI and 131968 frozen semen doses sold to farmers, developmental agencies and NGOs during the period under report.

Accomplishment and Targets Achieved:

Sr. No.	Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
1	Av. AFC (Months)	40.0 months	43.58±0.67 (67)	45.76±0.80 (31)	43.62±0.80 (71)	42.48±0.73 (71)	38.61±0.82 (67)
2	Av. service period (Days)	130 days	167±9.82 (101)	136.35±6.98 (97)	143.19±8.29 (90)	126.95±5.61 (100)	130.82±8.36 (99)
3	Calf mortality (0-3 months)	≤ 3 %	6.96 %	13.94 %	6.34 %	2.63 %	3.23 %
4	Wet average (kg)	≥ 8.50 kg	8.71 kg	8.92 kg	9.66 kg	9.91 kg	10.07 kg
5	Herd average (kg)	≥ 5.50 kg	5.90 kg	5.80 kg	6.94 kg	7.15 kg	7.29 kg

Recommendations:

1. Breedable buffalo population should be increased to 300 in herd of Main Unit, CIRB.
2. Significant improvement observed in milk production traits during the 2021-22 as compared to previous year performance.

GURU ANGAD DEV VETERINARY AND ANIMAL SCIENCES UNIVERSITY, LUDHIANA, MAIN UNIT (MURRAH)

Report period : 1st April 2021 to 31st March, 2022

1. **Name of Centre** : Guru Angad Dev Veterinary & Animal Sciences University, Ludhiana
2. **Project Code** : F.No. 18(I)2002- ASR- II
3. **Project Title** : Network Project on Buffalo Improvement
4. **Date of Start** : 01/04/1992
5. **Objectives** : As per NPBI
6. **Technical Programme** : The GADVASU Centre of the All India Coordinated Research Project on Buffalo Breeding is one of the participating units of the Network Project on Buffalo Improvement from 1.4.1992. Broadly, the technical program involves testing of 12-15 bulls on about 1000 breedable buffaloes at organized farms at GADVASU, Ludhiana; CIRB, Hisar; NDRI, Karnal; IVRI Izatnagar, LUVAS, Hisar and ICAR-RCER, Patna in every 18-month's cycle. From each bull, 75-80 pregnancies are to be obtained so that 20-25 recorded daughters per bull are available at all the centers for the evaluation of bulls. The bulls will be ranked based on the performance of their daughters and 20% of them will be selected as proven bulls from each set. The semen of the proven bulls will be used on elite buffaloes at different centers for the production of future sires and herd replacements.
7. **Financial Statement**: Statement showing budget sanctioned, amount spent and receipt realized for the period 1st April 2021 to 31st March 2022.

	Budget Sanctioned (Rs.)	**Amount Spent (Rs.)**
Pay & Allowances	18,20,000	8,77778
T. A.	---	---
Contingencies		
i) Recurring Cont.	60,00,000	60,00,000
SCSP Recurring General	2,00,000	2,00,000
ii) Non-Recurring Cont.		
Furniture		
Livestock		
Vehicles/Building Works		
Machinery and Equipment	---	---
SCSP Equipments	1,00,000	1,00,000
Total	**81,20,000**	**71,77,778**

Receipts: The project transferred 193956 kg of milk to the College of Dairy Sciences, GADVASU for sale after processing. The department sold 48 surplus/breeding animals and 57730 doses liquid & frozen semen to the progressive dairy farmers and dairy developed agencies.

8. Staff and Infrastructure Build up during the year: Staff in position :

Name & Designation of the person employed on the sanctioned post with pay scale	Date of joining	Date of leaving	Other project (assignment) in the institution besides the project	Total time spent for the project	Transfer or upgrading of the post if any, give details of sanction from the ICAR	Remarks
Statistical Assistant in Rs. 10300-34800	01/02/12	-	-	Full Time	-	Post withdrawn wef. 31.03.2022

Herd performance:-

9.1. Herd strength during the period 4/2021 to 3/2022

Sr. No	Category	Addition			Disposal			CB
		OB	B/P	T	D	T	S	
	Female							
1.	Calves 0 – 3 months	**07**	48/4	-	11	38	02	**8**
2.	Calves >3 – 12 months	**32**	0/0	38	2	21	05	**42**
3.	Heifers							
	1 – 2 years	**46**	0/0	21	1	31	0	**35**
	> 2 years	**76**	0/1	31	0	55	0	**53**
4.	Buffaloes in Milk	**72**	0/11	55	0	65	08	**65**
5.	Buffaloes Dry P /NP	**18**	0/0	65	1	-	23	**59**
	Sub Total	**251**	**48/16***	**210**	**15**	**210**	**38**	**262**
	Male							
1.	Calves 0 – 3 months	**18**	60		8	57	3	**10**
2.	Calves >3 – 12 months	**16**	0	57	4	29	26	**14**
3.	Male above							
	1 – 2 years	**12**	0	29		11	13	**17**
	> 2 years	**21**	0	11		12	13	**07**
4.	Breeding bulls	**12**		12			9	**15**
5.	Bullocks						-	
6.	Teasers						-	
	Sub Total	**79**	60	109	12	109	64	**63**
	Grand Total	**330**	**108/16***	**319**	**27**	**319**	**102**	**325**

OB = Opening Balance D = Deaths S = Sale B/P = Births/Purchase
T = Transfer CB = Closing Balance

9.2. Calving statistics during the period 4/2021 to 3/2022

Month	Male		Female		Dystokia		Prolapses		Still Birth		Abortion		Overall	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
April, 21	2	4.17	4	6.67	0	-	0	-	1	12.5	1	12.5	**8**	7.02
May	3	6.25	7	11.67	0	-	0	-	0	-	0	-	**10**	8.77
June	3	6.25	1	1.67	0	-	0	-	0	-	1	20.0	**5**	4.39
July	5	10.42	6	10.00	0	-	0	-	0	-	1	8.33	**12**	10.53
August	4	8.33	1	1.67	0	-	0	-	0	-	0	-	**5**	4.39
September	5	10.42	6	10.00	0	-	0	-	0	-	0	-	**11**	9.65
October	2	4.17	7	11.67	0	-	0	-	0	-	0	-	**9**	7.89
November	6	12.50	9	15.00	0	-	0	-	0	-	0	-	**15**	13.16
December	3	6.25	10	16.67	0	-	0	-	0	-	0	-	**13**	11.40
January,22	6	12.50	2	3.33	0	-	0	-	0	-	0	-	**8**	7.02
February	5	10.42	2	3.33	0	-	0	-	0	-	1	12.5	**8**	7.02
March	4	8.33	5	8.33	0	-	0	-	0	-	1	10.0	**10**	8.77
Overall	**48**	100.0	**60**	100.0	0	-	0	-	**1**	-	**5**	4.34	**114**	100.0

Sex ratio Male: Female = 1.0:0.8

9. 3 Disposal of animals during the period 4/2021 to 3/2022

Sr. No.		Surplus	Rep. Problem	Weak & Old	Death	Experimental purpose	Total
	Female						
1.	Calves 0 – 3 months			2	11	-	13
2.	Calves >3 – 12 months		2	3	2	-	7
3.	Heifers 1 – 2 years > 2 years		- 7	- 1	- 1	- -	0 11
4.	Buffaloes in Milk		3	0	0	1	08
5.	Buffaloes Dry P /NP		18	0	1	1	24
	Sub Total		**30**	**6**	**15**	**2**	**53**
	Male					-	
1.	Calves 0 – 3 months	3			8	-	11
2.	Calves >3 – 12 months	26			4	-	30
3.	Male 1 – 2 years > 2 years	13 13				- -	13 13
4.	Breeding bulls	9				-	9
5.	Bullocks					-	0
6.	Teasers					-	0
	Sub Total	**64**			**12**	**-**	**76**
	Grand Total	**64**	**30**	**6**	**27**	**2**	**129**

48 Bulls/bull calves sold for breeding purpose.

9.4. Month-wise mortality during the period 4/2021 to 3/2022

		Female						**Male**					
Month		**0-3 (mo)**	**3-6 (mo)**	**6-12 (mo)**	**1-2 yrs**	**Abo. 2 yrs.**	**Overall female**	**0-3 (mo)**	**3-6 (m)**	**6-12 (mo)**	**Above 1 yr.**	**Oveall male**	**Overall Herd**
April	No.	4	13	24	46	167	254	13	14	9	39	75	329
	Died			1									
	%			4.16									
May	No.	11	11	24	47	162	254	11	14	7	34	66	320
	Died				1								
	%				2.12								
June	No.	13	7	26	44	167	257	9	14	12	42	77	334
	Died												
	%												
July	No.	16	3	28	44	181	272	14	10	15	41	80	352
	Died	2											
	%	12.5											
August	No.	9	11	24	42	167	253	13	09	17	37	76	329
	Died							2					
	%							15.3					
Sept.	No.	9	15	20	41	171	256	12	8	19	38	77	333
	Died	2						2					
	%	22.2						16.6					
October	No.	12	14	17	43	178	264	10	9	19	40	78	342
	Died	1							1				
	%	8.3							11.1				
Nov.	No.	18	8	22	41	167	256	9	8	15	32	64	320
	Died	2							2				
	%	11.1							25.0				
Dec.	No.	21	10	22	39	172	264	8	9	13	34	64	328

	Died		1										
	%		10.0										
January	No.	15	11	19	40	176	261	12	8	11	40	71	332
	Died	3											
	%	20.0											
Feb.	No.	13	14	20	36	166	249	13	7	12	38	70	319
	Died							2					
	%							15.3					
March	No.	8	18	25	35	176	262	10	7	7	39	63	325
	Died	1				1		2	1				
	%	12.5				0.56		20.0	14.2				
Total	No.	**11**	**1**	**1**	**1**	**1**	**15**	**8**	**4**	**0**	**0**	**12**	**27**

Note: Calf mortality (0 – 3 months) = 13.87 % (19/137)

9.5. Causes of Mortality (quarter-wise) during the period 4/2021 to 3/2022

Particulars	**1st quarter**	**2ndquarter**	**3rd quarter**	**4th quarter**
A. Respiratory System :				
1. Pheumo-Enteritis		1	3	2
2. Broncho-Pheumonia	1	1	1	3
B. Digestive System :				
1. Enteritis		3		2
2. Septicemia & Toxaemia			1	2
3. Peritonitis	1			
4. Gastroenteritis		1		
5. Heoatutus				
6. Haem. Enteritis		1	2	
7. Torsion of Intestine volvulus				
9. Gastritis				
C. Circulatory				
D. Others				
1. Chronic debility				
2. Arthritis				
3. Umbilical Hernia				
4. Accidents				
5. Ectoparasitism				
6. Miscellaneous		1		
7.Diarrhoea				1
Total	**2**	**8**	**7**	**10**

9.6. Prophylactic measures taken during the period 4/2020 to 3/2021

Vaccination	No. of animals		Screening for disease	No. of animals		No. of animals treated for Parasitism etc.
	Available	Inoculated		Tested	Results	
FMD (Thrice)		972	TB JD		All Negative All Negative	No clinical case of parasitic infestation was observed during the year. All the animals were dewormed as per normal schedule.
HS (Thrice)		972	Brucellosis		All Negative	
BQ (Once)		302	-	-	-	
Brucellosis		43	-	-	-	

9.7. Female conception rate during the period 4/2021 to 3/2022

Month	Heifer									First Calver									Multiparous									Overall		
	1st AI			2nd AI			3rd & Above AI			1st AI			2nd AI			3rd & Above AI			1st AI			2nd AI			3rd & Above AI					
	I	C	CR	I	C	CR	I	C	CR	I	C	CR	I	C	CR	I	C	CR	I	C	CR	I	C	CR	I	C	CR	I	C	CR
Jan. 21	4	3	75	6	2	33.3	4	1	25	2	1	50	1	0	0	1	0	0	6	3	50	4	4	100	2	0	0	**30**	**14**	**46.66**
Feb.	4	2	50	3	0	0	10	5	50	2	2	100	0	0	0	0	0	0	5	2	40	3	2	66.66	2	2	100	**29**	**15**	**72.72**
March	3	2	66.66	2	2	100	6	3	50	7	4	57.14	0	0	0	1	0	0	5	2	40	2	1	50	0	0	0	**26**	**14**	**53.84**
April	1	0	0	2	0	0	4	3	75	5	2	40	2	1	50	0	0	0	2	1	50	2	2	100	1	1	100	**19**	**10**	**52.63**
May	4	3	75	1	1	100	3	2	66.66	6	1	16.66	2	0	0	0	0	0	3	2	66.66	1	0	0	1	0	0	**21**	**9**	**42.85**
June	2	1	50	1	0	0	1	0	0	2	0	0	1	0	0	2	1	50	4	1	25	2	0	0	3	0	0	**18**	**3**	**55.55**
July	3	1	33.33	1	0	0	2	2	100	5	2	40	3	0	0	2	0	0	4	0	0	0	0	0	3	0	0	**23**	**5**	**21.73**
Aug.	4	3	75	0	0	0	0	0	0	2	1	50	4	2	50	2	1	50	2	2	100	3	1	33.33	3	1	33.33	**20**	**11**	**55.00**
Sep.	1	0	0	0	0	0	1	0	0	2	2	100	2	1	50	6	3	50	2	1	50	3	3	100	0	0	0	**17**	**10**	**58.82**
Oct.	9	4	44.44	1	1	100	1	0	0	10	4	40	5	2	40	2	0	0	6	3	50	3	2	66.66	5	4	80	**42**	**20**	**47.61**
Nov.	4	2	50	1	0	0	0	0	0	3	1	33.33	4	4	100	3	3	100	6	3	50	1	1	100	2	2	100	**24**	**16**	**66.66**
Dec. 22	4	2	50	4	3	75	3	1	33.33	5	3	60	2	1	50	2	0	0	6	2	33.33	5	3	60	2	1	50	**33**	**16**	**48.48**
Total	43	23	53.48	22	9	40.90	35	17	48.57	51	23	45.09	26	11	42.30	21	8	38.0	51	22	43.13	29	19	65.51	24	11	45.83	**302**	**143**	**47.35**

I = No. of animals inseminated C. = No. of animals conceived CR%= Conception rate %

9.8. Bull-wise conception rate during the period 4/2021 to 3/2022

Sr. No.	Bull No.	Total Number of AI	Total Conceived	CR%
1.	1315	9	9	100.00
2.	2383	6	1	16.67
3.	2459	4	3	75.00
4.	2565	3	1	33.33
5.	2607	5	4	80.00
6.	2645	1	1	100.00
7.	2674	4	2	50.00
8.	2737	5	1	20.00
9.	2759	6	2	33.33
10.	3004	2	1	50.00
11.	3024	12	6	50.00
12.	4196	20	7	35.00
13.	5181	23	10	43.48
14.	5232	18	11	61.11
15.	5246	18	8	44.44
16.	5310	11	5	45.45
17.	5320	20	9	45.00
18.	5333	30	18	60.00
19.	5374	10	1	10.00
20.	6044	14	7	50.00
21.	7604	15	6	40.00
22.	102699	12	7	58.33
23.	147010	8	2	25.00
24.	R10	8	3	37.50
25.	PC575	13	6	46.15
26.	PC574	7	3	42.86
27.	M154	6	4	66.67
28.	M188	6	3	50.00
29.	PC288	3	1	33.33
30.	M416	3	1	33.33
Total		302	143	47.35

9.9. Bull-wise semen stock 4/2021 to 3/2022

Sr. No	Bull No.	Set No	Opening Balance	Semen Prod./ Received	Consumption for AI/Supplies etc					Balance
					Dairy Farm	Field Unit	Other agencies	Sold	Total Consumption	
1	293	1	200	0	0	0	0	0	0	200
2	458	2	200	0	0	0	0	0	0	200
3	558	3	200	0	0	0	0	0	0	200
4	610	4	200	0	0	0	0	0	0	200
5	888	5	200	0	0	0	0	0	0	200
6	M 82	6	200	0	0	0	0	20	20	180
7	M 156	7	200	0	0	0	0	0	0	200
8	M 432	8	34	0	0	0	0	0	0	34
9	M 584	9	200	0	0	0	0	0	0	200
10	M 675	10	79	0	0	0	0	10	10	69
11	M 1354	NW3	1834	0	0	0	0	0	0	1834
12	M 1437	NW4	1150	0	0	0	0	0	0	1150
13	M 1451	NW4	1062	0	0	0	0	0	0	1062
14	M 1506	NW4	3595	0	0	0	0	0	0	3595
15	M1749	NW7	323	0	0	0	0	0	0	323
16	M 1796	NW7	594	0	0	0	0	0	0	594
17	M 1875	NW8	2620	0	0	0	0	20	20	2600
18	M 1994	NW 9	1273	0	0	0	0	70	70	1203
19	M 2045	NW10	272	0	0	0	0	0	0	272
20	M 2073	NW10	231	0	0	0	0	0	0	231
21	M 2074	NW10	303	0	0	0	0	0	0	303
22	M 2083	NW10	293	0	0	0	0	0	0	293

23	M 2133	NW11	359	0	0	0	0	15	15	344
24	M 2148	NW11	200	0	0	0	0	0	0	200
25	M 2154	NW11	534	0	0	0	0	0	0	534
26	M 2176	NW12	2806	0	0	0	0	0	0	2806
27	M 2177	NW12	3400	0	0	0	0	70	70	3330
28	M 2185	NW12	1409	0	0	0	0	0	0	1409
29	M 2234	NW13	50	0	0	0	0	0	0	50
30	M 2269	NW13	359	0	0	0	0	10	10	354
31	M 2304	NW13	5015	0	0	0	0	3150	3150	1865
32	M 2357	NW14	3869	0	0	0	0	0	0	3869
33	M 2369	NW14	5155	0	0	0	0	0	0	5155
34	M 2371	NW15	4407	0	0	0	0	0	0	4407
35	M 2412	NW15	4440	0	0	0	0	3350	3350	1090
36	M 2417	NW15	5410	0	0	0	0	5000	5000	410
37	M 2429	NW15	4144	0	0	0	0	0	0	4144
38	M 2465	-	6822	0	0	0	0	0	0	6822
39	M 2469	-	2990	0	20	0	0	145	165	2825
40	M 2683	-	4767	0	20	0	0	70	90	4677
41	M 2501	NW16	7729	230	0	0	0	5044	5044	2915
42	M 2558	NW17	13008	3045	0	0	0	1295	1295	14758
43	M 2565	NW17	12045	3845	0	0	0	9665	9665	6215
44	M 2588	-	310	0	0	0	0	0	0	310
45	M 2594	NW17	9913	1048	0	0	0	2036	2036	8925
46	M 2607	NW17	7778	6885	0	0	0	6018	6018	8645
47	M 2645	NW18	6982	4415	0	0	0	3295	3295	8102
48	M 2676	NW18	8475	295	0	0	0	1520	1520	7210
49	M 2677	NW18	2104	0	0	0	0	0	0	2104
50	M 2689	NW18	2110	3510	0	0	0	470	470	5180
51	M 2674	NW19	3997	0	0	0870	2015	0	2885	1112
52	M 2737	NW 19	75	4620	0	420	565	20	1005	3690
53	M 2759	NW 19	1493	6898	0	1936	2180	1452	5568	2823
54	M 2792	-	0	5519	0	0		795	795	4724
55	M2786	-	0	5990	0	0	0	700	700	5290
56	M2793	NW20	0	1465		405	220		625	840
57	M2814	NW20	0	945			385		385	560
58	M2831	NW20	0	2435			220	55	275	2160
59	M2848	NW20	0	2525			880	0	880	1645
60	M2850	NW20	0	1190			350	0	350	840
61	M 3004	NW20	0	3605	0	0	840	1348	2188	1417
62	M 2822	Future	0	900	0	0	0	200	200	700
63	M 3024	Future	0	4890	0	0	0	0	0	4890
64	M 188	BATALA	0	2745	0	0	0	561	561	2184
Grand Total			**147418**	**67000**	**40**	**3631**	**7655**	**46404**	**57730**	**156673**

9.10 Body weights since inception of Network

Year	At birth	3 Months	6 Months	12 Months	18 Months	24 Months	At AFC	Adult
Female								
1991-92	32.08	54.53	78.74	143.86	238.40	297.26	433.07	
1992-93	30.64	51.40	87.89	161.61	203.40	293.26	399.31	
1993-94	32.71	61.53	93.14	160.38	222.27	284.25	440.92	
1994-95	30.62	59.92	93.91	165.60	242.29	304.86	435.68	
1995-96	31.11	62.02	87.98	154.51	236.73	322.04	441.69	
1996-97	31.48	65.96	97.06	174.88	242.09	330.71	476.09	
1997-98	29.27	59.87	95.59	168.95	252.98	318.33	455.27	
1998-99	29.13	62.68	92.62	187.02	269.70	343.06	458.21	
1999-00	30.27	60.59	86.46	163.34	277.21	342.58	461.34	
2000-01	31.74	61.32	94.43	159.20	243.10	329.79	490.33	
2001-02	32.44	62.04	94.96	188.23	271.09	341.46	512.25	
2002-03	34.26	62.12	95.02	187.45	287.49	368.89	485.89	
2003-04	32.00	61.57	92.04	160.65	261.52	349.24	461.74	
2004-05	31.67	59.85	90.61	168.47	265.27	354.22	486.85	
2005-06	30.57	70.23	96.21	162.58	235.74	314.75	481.06	
2006-07	30.94	65.11	104.38	169.75	246.33	324.79	516.50	
2007-08	29.47	59.68	91.76	171.21	238.38	322.80	480.07	
2008-09	31.62	62.69	99.45	180.28	274.86	352.00	507.28	
2009-10	30.04	60.49	104.76	194.36	281.54	361.78	500.69	

2010-11	31.35	61.50	101.58	202.80	306.67	380.00	477.14	
2011-12	29.77	65.31	96.40	183.75	267.71	359.11	469.25	
2012-13	31.08	62.63	106.07	222.56	311.48	380.00	492.42	
2013-14	29.35	67.46	110.68	217.78	301.91	376.20	543.75	
2014-15	30.50	65.88	101.73	212.20	289.52	363.59	490.65	
2015-16	29.18(17)	65.44(18)	102.54(13)	211.71(16)	287.76(22)	358.50(25)	490.46(24)	553(120)
2016-17	29.4(29)	67.26(24)	99.45(37)	197.63(35)	284.30(32)	374.09(17)	528.33(23)	560(101)
2017-18	31.7(27)	68.64(26)	97.24(48)	195.2(21)	294.3(19)	377.8(23)	547(24)	582(99)
2018-19	31.6	67.9	100.6	200.7	297.7	388.8	552.2	578
2019-20	30.82	68.4	99.7	198.6	296.2	385.3	542.9	589
2020-21	30.34	67.86	98.09	197.2	299.4	381.9	539.7	598
2021-22	30.8	69.07	95.68	195.6	289.23	396.8	559.5	607

Male

Year	At Birth	3 Months	6 Months	12 Months	18 Months	24 Months
1991-92	33.53	57.23	81.76	161.00	246.44	262.75
1992-93	33.04	55.46	83.23	163.29	-	-
1993-94	33.90	63.57	94.64	138.00	250.71	322.63
1994-95	33.60	64.69	96.61	181.27	271.00	325.75
1995-96	32.60	61.45	94.08	145.47	267.00	346.29
1996-97	32.41	72.24	100.29	198.75	312.33	350.43
1997-98	29.88	58.90	105.52	201.59	288.77	384.00
1998-99	30.35	59.73	97.00	206.67	312.00	410.00
1999-00	33.40	65.13	91.69	148.30	318.75	415.00
2000-01	33.40	64.05	97.00	159.25	213.63	340.56
2001-02	33.17	62.53	103.11	187.27	340.00	-
2002-03	34.79	65.00	99.38	205.56	346.88	460.00
2003-04	33.03	64.32	106.94	193.75	284.84	405.62
2004-05	34.36	60.53	105.88	195.25	288.44	408.56
2005-06	31.36	69.37	112.58	204.30	313.18	386.10
2006-07	33.44	70.86	111.81	215.08	335.63	403.75
2007-08	31.25	61.27	101.90	202.81	295.42	402.45
2008-09	32.37	67.50	108.53	211.43	286.11	387.27
2009-10	32.35	60.94	108.89	198.75	308.75	371.67
2010-11	32.73	66.60	98.70	200.00	287.00	398.00
2011-12	32.62	68.70	107.79	209.44	320.00	402.50
2012-13	31.96	63.36	110.88	262.00	370.71	397.50
2013-14	32.32	69.72	120.71	230.42	372.56	430.00
2014-15	30.03	68.53	97.70	201.20	360.00	356.67
2015-16	30.07(29)	67.18(28)	105.04(23)	203.9(14)	348.91(12)	421.25(04)
2016-17	30.82(24)	69.37(19)	103.40(15)	207.13(5)	337.24(9)	490.24(6)
2017-18	33.6(33)	68.5(22)	99.4(14)	224(6)	334(7)	456(5)
2018-19	32.5	66.1	101.0	224.5	335.2	451.3
2019-20	32.04	67.8	99.8	222.3	331.4	438.9
2020-21	33.8	69.6	102.7	219.4	342.2	480.4
2021-22	33.23	71.05	104.2	216.23	364.79	487.3

9.11. Production performance of buffaloes completing their lactation during the period 4/2021 to 3/2022

Lactation No.	No. of Obs.	Av. Lact. Yield (kg)	Av. Lact. Length (days)	305-day Milk Yield (kg)	Av. Peak yield (kg)
1st	25	2690.16±121.99	320.32±13.92	2543.68±58.16	13.19±0.30
2nd	9	2923.22±147.51	315.33±15.36	2814.66±141.3	15.35±1.20
3rd	13	2904.6±142.05	301.38±11.18	2849.61±114.6	16.01±0.87
4th	7	3073.68±359.6	316±19.41	3011.14±301.93	18.52±1.73
5th & onwards	8	2353.4±62.03	278.6±11.33	2329.4±49.52	15.05±1.25
Overall	**62**	2759.12±76.72	309.16±7.04	2672.29±56.87	14.94±0.42

9.12 Production performance of buffaloes (general herd) since inception

Years	No. of Obs.	Av. Lact. Yield (kg)	Av. Lact. Length (days)	305-day Milk Yield (kg)	Av. Peak yield (kg)
1991-92	157	1858	321	1738	10.80
1992-93	138	1894	340	1730	10.81
1993-94	144	2238	370	1948	11.01
1994-95	121	2003	320	1877	12.06
1995-96	126	2248	350	2008	11.86
1996-97	125	2115	334	1948	11.40
1997-98	098	2255	354	1995	11.03
1998-99	125	2411	372	2101	11.50
1999-00	114	2238	375	2041	11.41
2000-01	103	2257	347	2032	11.82
2001-02	112	2419	344	2175	12.95
2002-03	105	2245	304	2144	13.16
2003-04	111	2464	342	2233	12.90
2004-05	106	2501	346	2270	12.74
2005-06	78	2480	322	2327	13.17
2006-07	91	2389	326	2235	12.39
2007-08	67	2362	323	2176	12.62
2008-09	88	2346	329	2141	11.96
2009-10	67	2478	336	2271	12.73
2010-11	81	2836	376	2470	13.28
2011-12	87	2454	322	2306	13.38
2012-13	75	2741	349	2528	13.84
2013-14	55	2789	366	2509	13.63
2014-15	46	2948	353	2674	14.84
2015-16	45	2959	383	2640	14.63
2016-17	53	2924	390	2561	14.60
2017-18	54	2906	338	2707	14.73
2018-19	62	2904	334.5	2771	15.10
2019-20	73	2936	316.43	2841	15.43
2020-21	50	2708	310.7	2614	14.21
2021-22	**62**	**2759.12**	**309.16**	**2672.29**	**14.94**

9.12.1 Production performance of buffaloes (elite) since inception of network project

Year	No. of Obs.	Av. Lact. Yield (kg)	Av. Lact. Length (days)	305-day Milk Yield (kg)	Av. Peak yield
1991-92	16	2798	390	2490	13.20
1992-93	07	2822	433	2371	10.60
1993-94	18	3162	429	2657	14.40
1994-95	13	3060	381	2751	16.07
1995-96	21	3148	409	2630	14.08
1996-97	25	3021	390	2651	14.34
1997-98	18	3296	418	2773	14.27
1998-99	31	3410	440	2778	13.71
1999-00	21	3199	424	2684	13.42
2000-01	23	3133	410	2672	14.01
2001-02	35	3156	377	2815	15.31
2002-03	32	3030	337	2849	15.45
2003-04	39	3183	397	2757	14.58
2004-05	38	3160	380	2793	14.40
2005-06	34	2967	340	2755	14.52

2006-07	39	2893	349	2681	13.68
2007-08	19	3143	383	2752	14.02
2008-09	22	3106	388	2654	13.43
2009-10	25	3000	362	2694	13.71
2010-11	40	3474	404	2941	14.85
2011-12	32	3172	360	2879	15.41
2012-13	38	3188	367	2899	15.46
2013-14	13	3685	406	3186	16.07
2014-15	12	4046	423	3366	17.28
2015-16	10	3846	393	3332	20.07
2016-17	16	3855	407	3267	17.4
2017-18	14	3638	379	3417	17.8
2018-19	15	3693	374	3431	17.8
2019-20	13	3669	351	3497	18.3
2020-21	8	3414	356	3414	20.8
2021-22	**12**	**3791**	**347.14**	**3608**	**20.25**

9.13. Average milk components during the period (month-wise) 4/2021 to 3/2022

Month	Number of Observation	Fat %	SNF	Protein	Lactose
April, 2021	69	8.04	10.32	3.66	5.41
May	69	7.88	9.68	3.51	5.23
June	73	7.94	9.84	3.36	5.62
July	77	8.11	9.4	3.49	5.77
August	71	7.45	9.89	3.56	5.54
September	76	7.47	10.02	3.61	5.39
October	72	7.18	9.92	3.39	5.48
November	74	7.4	9.78	3.68	5.55
December	76	7.9	9.9	3.92	5.66
January, 2022	73	7.5	10.12	4.01	5.71
February	71	7.36	9.87	3.81	5.84
March	63	7.43	9.54	3.77	5.88
Overall	**72**	**7.64**	**9.86**	**3.65**	**5.59**

9.14. Reproduction performance of buffaloes calving during the period 4/2020 to 3/2021

Lactation No	Average Age at Calving (Months)	No of observation	Average Service Period (Days)	Average Dry Period (days)	Average Calving Interval (Days)
1	40.93±0.56	53	-	-	-
2	-	17	119.05±17.58	148.05±17.86	429.11±22.01
3	-	18	212.9±31.90	146.9±14.59	504.1±28.63
4	-	12	160.90±29.59	136.63±20.75	485±39.61
5 & Above		8	104.5±14.29	133.25±19.99	401.75±20.86
Overall		**108**	**146.93±13.12 (55)**	**142.47±9.26 (55)**	**454.02±15.07 (55)**

9.14.1. Reproduction performance of buffaloes calving since inception of network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
1991-92	49.2 (73)	169 (93)	187 (101)	493 (101)
1992-93	44.4 (48)	207 (100)	190 (98)	510 (100)
1993-94	46.7 (24)	228 (105)	184 (106)	532 (106)
1994-95	47.5 (37)	206 (96)	182 (96)	512 (96)
1995-96	45.6 (43)	218 (105)	196 (104)	526 (105)
1996-97	49.4 (34)	196 (76)	167 (76)	510 (76)

1997-98	45.0 (45)	248 (94)	203 (94)	553 (94)
1998-99	47.0 (34)	232 (81)	204 (84)	553 (87)
1999-00	42.0 (54)	213 (59)	175 (63)	518 (63)
2000-01	44.4 (27)	197 (81)	170 (82)	511 (82)
2001-02	44.7 (32)	164 (95)	149 (84)	496 (84)
2002-03	40.2 (39)	133 (95)	147 (95)	463 (95)
2003-04	36.8 (23)	160 (107)	153 (93)	455 (93)
2004-05	41.7 (27)	140 (80)	155 (80)	478 (80)
2005-06	43.7 (35)	143 (65)	119 (60)	433 (60)
2006-07	43.3 (20)	166 (69)	115 (61)	438 (61)
2007-08	42.8 (30)	147 (53)	126 (58)	419 (58)
2008-09	42.6 (43)	142 (90)	134 (52)	438 (52)
2009-10	39.3 (29)	151 (76)	174 (72)	492 (72)
2010-11	39.1 (21)	154 (94)	150 (76)	457 (76)
2011-12	37.4 (22)	136 (65)	154 (85)	473 (85)
2012-13	38.9 (34)	151 (53)	136 (59)	435 (59)
2013-14	42.3 (12)	159 (67)	190 (64)	471 (64)
2014-15	38.6 (23)	160 (40)	185 (40)	513 (41)
2015-16	40.1 (24)	162 (26)	119 (25)	458 (25)
2016-17	41.5 (27)	184(26)	104(26)	472(26)
2017-18	41.3 (25)	152 (41)	122 (41)	459 (41)
2018-19	40.7 (39)	136 (104)	130 (104)	441 (104)
2019-20	40.4(23)	125 (82)	133(82)	436 (82)
2020-21	40.56(34)	138(95)	129(95)	434(95)
2021-22	**40.93(53)**	**146.93(55)**	**142(55)**	**454(55)**

Figures in parenthesis indicate number of observations

9.15. Month-wise milk production and disposal during the period 4/2021 to 3/2022

	Production	**Disposal**			
Month	Total milk produced (kg)	Liquid milk (kg)	Calf feeding (kg)	Experimental purposes (kg)	Milk lost in handling (kg)
April, 2021	17903.7	16021	1827.9	30	24.8
May	19229.2	17115.0	2055.5	32	26.7
June	17713.5	15706.0	1967.5	12	28
July	17883.4	15400	2454.6		28.8
August	17587.4	14941	2611.7	10	24.7
September	17865.9	15504	2335.5		26.4
October	18331.4	15802	2502.1		27.3
November	19153.0	17347	1779.9		26.1
December	20139.9	17593	2517.7		29.2
January, 2022	19393.3	17015	2351.5		26.8
February	17550.1	15494	2007.2	28	20.9
March	17822.2	16018	1774.7		29.5
Total	220573	193956	26185.8	112	319.2

9.16. Feed and fodder purchased and offered (qtls) to animals during the period 4/2021 to 3/2022

Month	**Type of fodder/feed**	**Qty. produced at Farm**	**Qty. Purchased**	**Fed**	**Balance**
April,2021	Green	2199.7		2199.7	
	Dry	239.15		239.15	
	Silage	---		---	
	Concentrate		727.000	727.000	
May	Green	1317.55		1317.55	

	Dry	286.86		286.86	
	Silage	293.64		293.64	
	Concentrate		705.250	705.250	
June	Green	1586.7		1586.7	
	Dry	257.09		257.09	
	Silage	263.26		263.26	
	Concentrate		721.000	721.000	
July	Green	2169.81		2169.81	
	Dry	213.00		213.00	
	Silage	274.73		274.73	
	Concentrate		747.500	747.500	
August	Green	2320.88		2320.88	
	Dry	184.42		184.42	
	Silage	275.61		275.61	
	Concentrate		745.000	745.000	
September	Green	1683.33		1683.33	
	Dry	78.58		78.58	
	Silage	260.96		260.96	
	Concentrate		719.250	719.250	
October	Green	1557.49		1557.49	
	Dry	180.96		180.96	
	Silage	287.09		287.09	
	Concentrate		722.500	722.500	
November	Green	1091.90		1091.90	
	Dry	289.69		289.69	
	Silage	276.83		276.83	
	Concentrate		731.00	731.000	
December	Green	1560.70		1560.70	
	Dry	273.23		273.23	
	Silage	293.84		293.84	
	Concentrate		670.500	670.500	
January 2022	Green	1778.81		1778.81	
	Dry	252.30		252.30	
	Silage	274.31		274.31	
	Concentrate		671.500	671.500	
February	Green	1646.48		1646.48	
	Dry	53.37		53.37	
	Silage	266.19		266.19	
	Concentrate		697.000	697.000	
March	Green	2283.16		2283.16	
	Dry	217.96		217.96	
	Silage	280.36		280.36	
	Concentrate		687.750	687.750	
Total	Green	21196.51		21196.51	
	Dry	2526.61		2526.61	
	Silage	3046.82		3046.82	
	Concentrate		8545.25	8545.25	

9.17. Milking performance during the period 4/2021 to 3/2022

Month	No. of Animal in milk	No. of Animal dry	Total Animal	% in Milk	Wet average (kg)	Herd average (kg)
April, 2021	69	24	93	74.19	8.4	6.41
May	69	28	97	71.13	8.5	6.39
June	73	29	102	71.56	8.6	5.73
July	77	37	114	67.54	7.9	5.06
August	71	41	112	63.39	7.9	5.14

September	76	34	110	69.09	7.83	5.41
October	72	42	114	63.15	8.21	5.19
November	74	38	112	69.64	8.62	5.7
December	76	34	110	66.07	8.55	5.9
January, 2022	73	45	118	61.86	8.56	5.3
February	71	46	117	60.68	8.82	5.35
March	63	43	106	59.43	9.12	5.42
Overall	**72**	**37**	**109**	**66.44**	**8.42**	**5.58**

9.17.1. Milking performance since inception

Years	No. of Animal in milk	No. of Animal dry	Total Animal	% in Milk	Wet average (kg)	Herd average (kg)
1991-92	148	74	222	66.67	5.65	3.79
1992-93	149	77	226	65.93	5.54	3.68
1993-94	115	76	191	60.21	6.20	3.71
1994-95	116	67	183	63.39	6.09	3.86
1995-96	123	66	189	65.08	6.43	4.21
1996-97	112	72	194	60.87	6.17	3.73
1997-98	116	61	177	65.54	6.53	4.30
1998-99	119	65	184	64.67	6.26	4.06
1999-00	109	55	164	66.46	6.26	4.17
2000-01	105	58	163	64.42	6.70	4.36
2001-02	94	48	142	66.20	7.09	4.70
2002-03	109	48	157	69.43	7.22	5.00
2003-04	108	52	160	67.50	7.01	4.80
2004-05	91	45	136	66.91	7.33	5.00
2005-06	74	31	105	70.48	7.36	5.21
2006-07	81	27	108	75.00	7.03	5.27
2007-08	70	29	99	70.35	6.90	4.90
2008-09	78	38	116	67.00	7.07	4.73
2009-10	83	40	123	69.17	7.62	5.15
2010-11	88	47	135	64.93	7.21	4.72
2011-12	88	51	139	63.06	7.56	4.79
2012-13	78	45	123	63.49	7.74	4.90
2013-14	61	43	104	58.29	7.98	4.67
2014-15	54	32	86	62.34	7.97	4.98
2015-16	54	35	89	61.89	8.04	5.01
2016-17	49	25	74	70.00	7.92	5.45
2017-18	49	30	79	64.84	8.03	5.25
2018-19	68	34	102	65.9	8.40	5.38
2019-20	67	38	105	66.46	8.31	5.44
2020-21	64	39	103	62.64	8.22	5.06
2021-22	**72**	**37**	**109**	**66.44**	**8.42**	**5.58**

9.18. Bull-wise daughters born/daughters reaching A.F.C. and completing 1st lactation records during the period 4/2021 to 3/2022.

Bull No.	Total No. of daughters born	No. of daughters reaching A. F. C.	No. of daughters completing 1st Lactation	Last Lactation
1150	1	-	-	-
1208	1	-	-	-
1994	1	-	-	-
2045	1	-	-	-
2269	1	-	-	-
2565	3	-	-	-
2607	1	-	-	-

2645	3	-	-	-
2674	2	-	-	-
2689	1	-	-	-
2737	5	-	-	-
2759	2	-	-	-
4196	1	-	-	-
5181	1	-	-	-
5232	7	-	-	-
5246	6	-	-	-
5310	1	-	-	-
5320	4	-	-	-
5333	3	-	-	-
5374	1	-	-	-
102699	1	-	-	-
PC574	1	-	-	-
1027	-	1	-	-
1053	-	1	-	-
2133	-	2	-	-
2185	-	1	-	-
2467	-	2	-	-
2501	-	1	-	-
2558	-	1	-	-
2607	-	1	-	-
3267	-	2	-	-
4592	-	1	-	-
4687	-	3	-	-
4733	-	1	-	-
6379	-	1	-	-
6409	-	1	-	-
6646	-	1	-	-
DARA	-	1	-	-
M29	-	2	-	-
M53	-	2	-	-
M-Bali	-	2	-	-
Rustme hind	-	1	-	-
Sikander	-	1	-	-
Virat	-	1	-	-
Purchase*	-	23	-	-
1053	-	-	1	-
2133	-	-	1	-
2383	-	-	1	-
2417	-	-	1	-
2467	-	-	1	
2759	-	-	1	
3267	-	-	1	
4889	-	-	1	
5232	-	-	1	
6007	-	-	1	
6409	-	-	1	
102699	-	-	1	
298400	-	-	1	
M51	-	-	1	
Purchase*	-	-	9	
Total *	48	53	23	-

*set bulls only

9.19. Bull-wise daughters completing 1st lactation during the period 4/2021 to 3/2022

Sr. No	Bull No.	Daughter No.	Date of birth	Date of calving	1st lactation 305-day milk yield (kg)	Total lactation yield (kg)	Lactation length (days)
1	2412	2953	10.11.16	4.7.2020	2888	3138	377
2	2417	3012	17.1.17	8.6.20	3169	3324	353
3	6007	3031	9.12.16	20.12.20	2267	2267	300
4	PUR	3049	13.12.16	19.3.21	2644	2644	299

5	4889	3056	24.1.17	15.1.21	2514	2539	319
6	2383	3057	26.1.17	3.7.20	3101	3183	332
7	2133	3067	20.3.17	8.5.21	2410	2413	308
8	6409	3073	30.4.17	20.1.21	2393	2408	313
9	3267	3075	10.5.17	31.7.20	2373	2373	265
10	1053	3077	22.5.17	1.5.2021	2964	2964	307
11	Sikander	3083	10.8.17	26.11.20	2411	2411	273
12	2467	3085	12.8.17	19.9.20	2366	2366	277
13	2467	3096	3.10.17	15.10.20	2142	2142	274
14	M51	3117	4.1.18	21.12.20	2584	2986	408
15	Purchase	3135	24.10.17	2.7.21	2270	2270	270
16	Purchase	3137	21.9.17	15.8.20	2207	2207	279
17	Purchase	3138	16.9.17	7.4.21	2743	2743	271
18	Purchase	3149	22.3.18	2.1.21	2783	2843	326
19	Purchase	3152	28.9.17	2.1.21	2204	2204	236
20	Purchase	3152			2708	2809	331
21	Purchase	3157	22.3.18	13.1.21	2506	2537	320
22	102699	3228	15.10.17	1.11.21	2583	2584	307
23	Purchase	3229	10.11.16	26.9.19	2783	5139	602
24	Purchase	3321	24.8.17	28.3.21	2442	2562	334
25	Purchase	3459	17.1.18	12.7.21	2137	2198	327

9.20 List of breeding/young bulls as on 3/2022

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's 305 days or less yield (kg)	Semen doses available	Remarks
1.	2607	17-12-14	2605	2369	3899	8645	
2.	2645	20-06-15	2530	1994	3394	8102	
3.	2689	03-07-16	2436	1693	3151	5180	
4.	2737	04-08-17	2543	2383	3109	3690	
5.	2759	09-11-17	2502	2133	3340	2823	
6.	2793	06-07-18	2788	2467	3339	840	
7.	2814	03-09-18	2905	2565	3675	560	
8.	2831	11-10-18	2897	VIRAT	4815	2160	
9.	2838	02-11-18	2502	1354	3340		
10.	2847	14-12-18	2859	4733	3157		
11.	2848	22-12-18	2808	2558	3304	1645	
12.	2850	25-01-19	2973	2594	3683	840	
13.	2918	28-12-19	2897	SHERU 2	4815		
14.	2921	19-01-20	3214	1354	3177		
15.	2930	15-03-20	3212	1354	3590		
16.	2941	08-06-20	3012	4905	3169		
17.	2951	23-07-20	2992	4905	3501		
18.	2983	13-12-20	2912	1209	3097		
19.	2990	24-12-20	2741	1219	3723		
20.	2991	02-01-21	2542	1994	3428		
21.	2992	02-01-21	3152	2689	2708		
22.	2997	24-01-21	2700	1208	3149		
23.	3000	01-02-21	2897	PC288	4815		
24.	3007	28-10-19	PUR	PUR	4132		
25.	3009	05-03-21	2979	2689	2893		
26.	3014	06-10-20	DHANNO	BIRLA	4420		
27.	3024	14-04-17	Laxmi	Laden	4680		

9.21 Target achieved during the years 4/2021 to 3/2022

S.N	Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
1.	Av. Age at first calving	40 months	41.30 (25)	40.74 (39)	40.42 (23)	40.56 (34)	40.93 (53)
2.	Av. Service period	130 days	152 (41)	136 (104)	125 (82)	138 (95)	147 (55)
3.	Calf mortality (0-3 months)	≤3 %	8.22	1.94	3.45	8.18	13.87
4.	Wet average	≥8.5 kg.	8.03 kg.	8.40	8.31	8.22	8.42
5.	Herd average	≥5.5 kg.	5.25 kg.	5.38	5.44	5.06	5.58

10. Salient Research Achievements including survey reports/farmers animals covered in the project:

- Fourteen bulls have been presented for proposed 20th set of the project and seven has been selected.
- The average age at 1st calving is achieved to 40.93 months.
- The average age at first collection of the bulls at the institute was 28.8 months.
- The average 305-day yield of the herd was 2672 kg and wet average of 8.42 kg and herd average of 5.58 kg during the period 4/2021 to 3/2022.

11. Publications: Nil

12. Expected Socio-economic impact in the tract :

- Supply of high genetic merit frozen semen has helped to increase the production average of animals in the tract
- Farmers are adopting AI as main mean of mating rather than natural service
- Awareness among farmers of rearing animals on scientific lines like making concentrate ration of their own and other managemental practices

13. Constraints if any:

Regular staff like beldars, cattle attendants and milk recorder has been reduced in the strength in the project which is causing working problems in maintaining the herd.

14. Focus of work in the coming year:

Efforts are being made to further improve the reproductive efficiency and herd strength with special focus on increasing elite animals and keeping calf mortality at lower levels.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC		Receipts (ICAR Share)	Balance
Total	ICAR Share		ICAR Share	State Share		
81.20	58.65 + 3.00 (SCSP)	61.65	54.58334	17.19444	8.43261	+ 15.49927

Herd Performance:

Herd strength at the centre was 325 animals with 177 breedable buffaloes (> 2 year). During the period 108 calving were reported with 48 male and 60 females, one still births and five abortion. The calf mortality (0-3 months) during the period was 13.87 % (19/137) higher than the previous year 8.18 % (9/110). The female conception rate at the farm was 47.35 %, better as compared to 46.20 % in 2020-21.

During the report period 67000 semen doses were produced and 57730 semen doses were sold and supplied to field unit/ other Murrah centers and other agencies. 156673 frozen semen doses from superior bulls are available at the centre. 305 day or less day milk yield was 2672 kg (62) with average peak yield 14.94 kg higher than previous year 2614 kg (50) with average peak yield of 14.21 kg. The average lactation lengths of 310 days (n=62). The reproductive performance viz. AFC, SP, DP and CI were 40.93 months (53), 147 days (55), 142 days (55) and 454 days (55), respectively. The wet 8.42 kg and herd average 5.58 is slightly higher than the previos year 8.22 kg and 5.06 kg respectively.

Accomplishment and Targets Achieved:

Sr. No.	Trait	Target	**2017-18**	2018-19	2019-20	2020-21	2021-22
1	Av. AFC (Months)	40.0 months	41.30 (25)	40.74±1.43 (39)	40.42±1.05 (23)	40.56±1.05 (34)	40.93±0.56 (53)
2	Av. service period (Days)	130 days	152 (41)	136±9.5 (104)	125±9.59 (82)	138±12.11 (95)	147±13.12 (55)
3	Calf mortality (0-3 months)	≤ 3 %	8.22	1.94	3.45	8.18 %	13.87 %
4	Wet average (Kg)	≥ 8.50 kg	8.03	8.40	8.31	8.22	8.42
5	Herd average (Kg)	≥ 5.50 kg	5.25	5.38	5.44	5.06	5.58

Recommendations:

- Breedable buffalo population should be increased to 200 approx.
- The calf mortality should be controlled and restrict below 3% as project target.

ICAR-NATIONAL DAIRY RESEARCH INSTITUTE, KARNAL

1. Name of Center : **NDRI, Karnal, Main Unit**
2. Project Code : 1010476
3. Project Title : Network project on buffalo improvement-Institute herd
   (Lead Division: Animal Genetics & Breeding-ICAR-NDRI, Karnal)
4. Date of Start : 1993-1994
   Name of the Project In-charge: Dr. Vikas Vohra
5. Objectives : To establish elite herd of 50 to 100 Murrah for the production of genetically superior young bulls. To evaluate sires through institutional progeny testing. To produce, test, propagate and conserve high genetic merit male germplasm.
6. Technical Programme
   - Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 500 and 300 breedable females (Murrah).
   - Selection and testing of minimum 15 bulls of Murrah / 4-6 bulls for other breeds in every 18/24 months cycle.
   - Production of minimum 10,000 (Murrah) and 3000 to 5000 (Other breeds) frozen semen doses from each test bull.
   - Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated.
   - Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
   - Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
   - Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation).
   - Monthly testing of milk constituents (Fat %, SNF % and Protein %) and Somatic Cell Count, wherever feasible, at institutional herds.
   - Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
   - Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Financial Statement

Financial Statement NBPI/ICAR-NDRI (Main Unit)	Head wise budget allocation and utilization; revenue receipts		
	Equipment	Contingency (including SCSP)	Total
Total funds Received during 2021-22	2,00,000	17,00,000	19,00,000
Expenditure up to 31-03-2022	94,400	15,27,327	16,21,727
Closing Balance on 31-03-2022	1,05,600	1,72,673	2,78,273

8. Staff Position - Staff associated with the project through Redeployment

Discipline	Name of Scientist / Staff	Status PI/Co-PI
AGB	Dr. Vikas Vohra, Principal Scientist (from Jan. 2021) Dr. G. R Gpwane, Prinicipal Scientist (from March 21)	PI Co-PI
ARGO	Dr. T. K. Mohanty, Principal Scientist & I/c ABRC Dr. Mukesh Bhakat, Senior Scientist	Co-PI Co-PI
LPM	Dr. Pawan Singh, Principal Scientist & I/c LPM	Co-PI
No. of staff		
Contractual staff	2 (High Skilled) – 12 months 2 (Skilled) – 12 months	

9. Herd Performance Enclosed Tables 9.1 to 9.21

9.1 Herd Strength during the Period 1st April 2021 to 31st March, 2022

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P*	T/E	D	T/E	S	E	CB
	Female								
1	Below 3 months	11	40		3	44	-		**4**
2	3-12 months	45		44	6	55	-		**28**
3	1-2 years	57		55	-	54	2		**56**
	Above 2 years	68		54	3	27	8		**84**
4	Buffaloes in Milk	88		27	4	26	5		**80**
5	Buffaloes Dry P /NP	69		26	8	8	17		**62**
	Sub Total	**338**	**40**	**206**	**24**	**214**	**32**		**314**
	Males								
1	Below 3 months	6	64		6	56	-		**8**
2	3-12 months	29		56	5	13	20		**47**
3	1-2 years	1		13	-	8	3		**3**
	Above 2 years	8		8	1	8	7		**-**
4	Breeding bulls	49		8	-	13	-		**44**
5	Bullocks / Teasers	2		13	-	11	-		**4**
	Sub Total	**95**		**98**	**12**	**109**	**30**		**106**
	Grand Total	**433**	**104**	**304**	**36**	**323**	**62**		**420**

OB = Opening Balance; B = Birth; P= Purchase; T = Transfer;
E = Experimental; D = Death; S = Sale; CB = Closing Balance
* Including either one female or one male as followers of three buffaloes purchased

9.2 Calving Statistics including abnormalities (1st April 21 to 31st March 2022)

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 21	2	1	-	-	-	-	-	3
May	1	4	-	-	-	-	-	5
June	-	-	-	1	-	1	-	2
July	2	4	-	1	-	-	-	7
August	7	2	2	-	-	2	-	13
September	15	8	2	1	-	3	-	29
October	11	7	-	-	-	-	-	18
November	9	7	1	-	-	2	-	19
December	8	3	1	-	-	2	-	14
January 22	2	2	-	-	-	2	-	6
February	4	1	-	1	-	-	-	6
March	3	1	-	-	-	-	-	4
Overall	**64**	**40**	**6**	**4**	**-**	**12**	**-**	**126**

Sex ratio Male : Female 1:0.62; SB% = 4.76%; Abortion % = 3.17%

9.3. Disposal of Animals during the Period 1st April 21 to 31st March 22

Female	Primary cause of disposal							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves								
0 to 3 months						3		3
3-12 months						6		6
Heifers								
1-2 years								
> 2 years				3		3		6
Buffaloes								
Milch						4		4
Dry						8		8
Sub Total				**3**		**24**		**27**
Males	**Primary cause of disposal**							
Calves								
0 to 3 months						6		6
3-12 months	17	3				5		25
1 to 2 year								
>2 year	4					1		5
Breeding bulls								
Bullock+Teaser+Others								
Sub Total	**21**					**12**		**36**
Grand Total	**21**	**3**		**3**		**36**		**63**

9.4. Mortality during the Period 1st April 2021 to 31st March, 2022

Month	No. Died %	Female						Male					Over all Herd
		0-3 Month	3-12 Month	1-2 Yrs.	> 2 Yrs.	Milk + Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
Apr, 21	No.	3	54	54	71	169	351	6	21	2	0	29	380
	Died	0	0	0	0	0	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0	0	0	0	0	0
May, 21	No.	7	52	55	71	169	354	4	24	0	0	28	382
	Died	0	1	0	0	1	2	0	1	0	1	2	4
	%	0	0.1	0	0	0.6	0.6	0	0.4	0	0	7.1	1.04
Jun, 21	No.	5	52	56	72	167	352	3	25	0	0	28	380
	Died	0	0	0	0	2	2	0	0	0	0	0	2
	%	0	0	0	0	1.2	0.5	0	0	0	0	0	0.5
Jul, 21	No.	8	52	54	75	167	356	3	27	0	0	30	386
	Died	0	0	0	0	0	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0	0	0	0	0	0
Aug, 21	No.	5	48	52	82	167	354	8	26	0	0	34	388
	Died	1	0	0	0	3	4	2	0	0	0	2	6
	%	20	0	0	0	1.8	1.1	25	0	0	0	5.9	1.5
Sep, 21	No.	13	40	46	77	167	343	23	8	0	0	31	374
	Died	0	0	0	2	2	4	0	0	0	0	0	4
	%	0	0	0	2.6	1.2	1.2	0	0	0	0	0	1.1
Oct, 21	No.	17	36	41	86	151	331	32	10	0	0	42	373
	Died	0	0	0	0	0	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0	0	0	0	0	0
Nov, 21	No.	21	23	53	85	161	343	36	16	0	0	52	395
	Died	0	0	0	0	0	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0	0	0	0	0	0
Dec, 21	No.	15	27	48	85	165	340	28	29	0	0	57	397
	Died	1	2	0	0	0	3	1	0	0	0	1	4
	%	6.7	7.4	0	0	0	0.8	3.6	0	0	0	1.8	1.0

Jan, 22	No.	10	22	56	85	168	341	18	37	1	0	56	397
	Died	0	3	0	1	2	6	1	2	0	0	3	9
	%	0	13.6	0	1.2	1.2	1.8	5.6	5.4	0	0	5.4	2.3
Feb, 22	No.	6	27	56	82	168	339	14	41	2	0	57	396
	Died	0	0	0	0	2	2	1	2	0	0	3	5
	%	0	0	0	0	1.2	0.6	7.1	4.9	0	0	5.3	1.3
Mar, 22	No.	4	28	56	84	169	341	8	47	3	0	58	399
	Died	1	0	0	0	0	1	1	0	0	0	1	2
	%	25	0	0	0	0	0.3	12.5	0	0	0	1.7	0.5
Overall	Died	**3**	**6**	**0**	**3**	**12**	**24**	**6**	**5**	**0**	**1**	**12**	**36**
	%	**2.6**	**1.3**	**0**	**0.3**	**0.6**	**0.6**	**3.3**	**1.6**	**0**	**0**	**2.4**	**0.7**

Overall (0-3 months calves) (Opening Balance + Born = 17+104 = 121; calf died =9 => 9/121 = 7.438%**)**

9.5. Causes of Mortality (quarter wise) during the period 1st April 21 to 31st March 2022

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	3	2	3	5	13
Pneumonitis	-	-	-	-	-
Septicemia / Toxemia	3	6	-	-	9
Peritonitis	-	-	-	-	-
JD/TB	-	-	-	-	-
Milk Fever / metabolic diseases	-	-	2	-	2
TRP / TP	-	-	-	-	-
Parasitism	-	-	-	-	-
Sudden death	-	-	2	1	3
Peri-parturient disorders	-	-	-	-	-
General Debility	-	-	-	1	1
Miscellaneous	-	-	3	5	8
Total	6	8	10	12	36

9.6 Prophylactic Measures undertaken during 2021-22

Disease	Vaccination Date / No. of animals	No. of animals Tested / Positive		Dates and No. of animals treated for Parasitism
FMD	Feb 2022	475	-	Dewormed all calves upto 6 months and other buffaloes as required
HS	March 2022	475	-	
BQ	March 2022	475	-	
Brucelloses				
JD				
TB	Nov. 2021	300	-	
IBR				
Mastites				

9.7. Female Conception Rate During the Period January to December 2021

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	46	25	54.34	17	8	47.05	5	2	40	10	4	40	78	39	50
1st calvers	24	13	54.16	12	6	50	7	1	14.28	12	2	16.66	55	22	40
Multiparous	93	43	46.23	34	15	44.11	9	2	22.22	14	2	14.28	150	62	41.33
Overall	**163**	**81**	**49.69**	**63**	**29**	**46.03**	**21**	**5**	**23.80**	**36**	**8**	**22.22**	**283**	**123**	**43.46**

AIs = No. of animals inseminated; C = No. of animals conceived ; CR % = Conception rate%

9.8 Quarter-wise conception rate During the Period January to December 2021

Quarter	No. of A I	Preg. animals	CR %
Jan – Mar	86	38	44.18
Apr- Jun	45	16	35.55
Jul- Sep	36	14	38.88
Oct- Dec	116	55	47.41
Overall	283	123	43.46

9.9. Bull-wise Conception Rate During the period January to December, 2021

Sr. no.	Bull No.	Set No.	Total Number of AI	Total Conceived	CR%
1	1315	19	26	10	38.46
2	2357 P	14	8	2	25.00
3	2674	19	23	11	47.82
4	2737	19	47	20	42.55
5	2759	19	58	35	60.34
6	4196 P	14	14	3	21.42
7	5232	19	15	7	46.66
8	5246	19	6	4	66.66
9	5310	19	12	6	50.00
10	5320	19	14	5	35.71
11	5333	19	13	3	23.07
12	5374	19	16	6	37.50
13	6044 P	14	23	8	34.78
14	7604	19	8	3	37.50
Overall			**283**	**123**	**43.46**

9.10 Bull Wise Semen Stock (April-2021 to March 2022)

S. No.	Bull No.	Centre	Opening balance on date 01.04.2021	Total semen received & produced	Utilization-NPBI			Total utilization	Closing Balance on date 31.03.22
					NDRI, Karnal		CIRB Hisar		
					Main Unit	Field Unit			
19th set bull									
1	2848	GADVASU	0	500	50	150		200	300
2	2831	GADVASU	0	100	0	0		0	100
3	3004	GADVASU	0	200	25	150		175	25
4	2793	GADVASU	0	100	0	0		0	100
5	5427	CIRB	0	1540	50	600		650	890
6	7649	NDRI	0	7160	0	650	2750	3400	3760
7	7544	NDRI	0	5300	0	450	2750	3200	2100
8	1454	LUVAS	0	260	0	0		0	260
Total				**15160**	**125**	**2000**	**5500**	**7625**	**7535**

9.11 Average Body weight (kg) since 1999 (Indicate number of animals in parenthesis)

Year	Birth	3 Months	6 Months	12 Months	18 Months	24 Months	At AFC
Female							
Since 1999	31.32	65.00	104.62	171.67	251.95	333.05	559.23
Current year	32.00	67.01	106.02	174.69	259.06	355.01	601.03
Male					**Adults**		
Current year	30.01	68.66	95.76	-	-	-	-

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	18	2398.3	335.0	2175.3	12.7
2nd	17	3040.4	341.2	2791.7	14.6
3rd	27	2549.2	313.4	2434.1	14.4
4th	17	2371.1	293.6	2300.7	14.0
5th & above	6	2651.1	318.0	2598.0	13.7
Overall	**85**	**2587.1**	**319.9**	**2435.7**	**13.9**

9.12.1 Average production performance of Buffaloes since Inception of Network

Year	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1993-1994	2513.70 (117)	311.00 (117)	2351.80 (137)	-
1994-1995	2382.30 (128)	325.90 (128)	2270.10 (128)	11.70 (128)
1995-1996	2750.90 (106)	323.10 (106)	2576.10 (106)	14.20 (106)
1996-1997	2636.50 (105)	330.00 (105)	2423.10 (105)	13.20 (105)
1997-1998	2336.10 (128)	301.00 (128)	2191.20 (128)	11.80 (128)
1998-1999	2190.00 (112)	328.30 (112)	2032.60 (112)	11.10 (112)
1999-2000	1951.00 (095)	316.80 (095)	1822.40 (102)	11.10 (102)
2000-2001	2075.30 (116)	292.30 (116)	2019.10 (126)	12.00 (126)
2001-2002	2070.80 (085)	315.90 (085)	1963.20 (091)	11.80 (091)
2002-2003	2209.44 (072)	330.07 (072)	2000.67 (081)	12.01 (081)
2003-2004	2009.08 (077)	315.23 (077)	1897.08 (089)	10.93 (092)
2004-2005	2091.94 (080)	317.00 (080)	2025.00 (098)	10.86 (098)
2005-2006	2226.97 (126)	301.25 (126)	2159.06 (142)	12.41 (142)
2006-2007	2143.65 (099)	307.39 (099)	2053.77 (111)	11.80 (111)
2007-2008	2254.75 (112)	322.15 (112)	2094.16(127)	12.50(127)
2008-2009	2419.13 (081)	341.61 (081)	2256.01 (086)	12.43 (086)
2009-2010	2272.54 (077)	313.04 (077)	2221.61 (084)	12.08 (084)
2010-2011	2146.04 (125)	310.69 (125)	2014.70 (130)	11.24 (130)
2011-2012	2344.16 (67)	331.83 (67)	2191.83 (67)	10.67 (67)
2012-2013	2381.05 (78)	304.87 (78)	2255.81 (83)	11.56 (83)
2013-2014	2631.90 (82)	332.68 (82)	2430.91 (82)	11.98 (98)
2014-2015	2486.33 (119)	305.15 (119)	2223.57 (124)	12.86 (124)
2015-2016	2727.78 (118)	329.77 (118)	2523.32 (118)	14.10 (118)
2016-2017	2716.96 (87)	335.97 (87)	2535.51 (87)	13.36 (87)
2017-2018	2523±58.3 (96)	335.3±6.1 (96)	2386.7±44.8 (96)	13±0.2 (96)
2018-2019	2390.93 (123)	307.39 (123)	2318.78 (123)	12.10 (123)
2019-2020	2256.1 (106)	296.82 (106)	2184.1 (106)	12.8 (106)
2020-2021	2390±62.55 (90)	346.73±8.3 (90)	2198.75±41.48 (90)	12.21±0.13 (90)
2021-2022	**2587.11±71.87 (85)**	**319.94±8.07 (85)**	**2435.74±58.10 (85)**	**13.99±0.19 (85)**

9.12.2 Herd Life Production (up to ≥4th Lactation) during 2021-22

Animal No.	**Date of Birth**	**Date of completion of ≥ 4th lactation**	**Date of 1st calving**	**LTMY**	**HLF Days**	**HPL Days**	**PL Days**	**UNPLDays**	**MY/ HLF**	**MY/ HPL**
5571	14-04-2005	31-12-2021	19-03-2008	15652	6105	5035	2415	2620	2.56	3.10
5620	13-08-2005	20-07-2021	19-07-2011	24141	5820	3654	2813	841	4.14	6.60
5834	03-03-2007	29-09-2021	13-02-2012	12435	5324	3516	1651	1865	2.33	3.53
5835	03-03-2007	30-03-2022	16-04-2012	13028	5506	3635	2006	1629	2.36	3.58
6011	18-09-2008	19-08-2021	24-07-2012	6983	4718	3313	932	2381	1.48	2.10
6350	13-08-2011	19-08-2021	13-08-2014	11580	3659	2563	1468	1095	3.16	4.51
6359	10-09-2011	23-03-2022	21-06-2016	10945	3847	2101	1385	716	2.84	5.20

6361	13-09-2011	15-07-2021	06-10-2014	11168	3593	2474	1523	951	3.10	4.51
6463	06-04-2012	15-07-2021	16-05-2016	7774	3387	1886	1063	823	2.29	4.12
6535	13-10-2012	23-03-2022	08-06-2016	11480	3448	2114	1430	684	3.32	5.43
6626	21-08-2009	29-09-2021	21-02-2013	19341	4422	3142	2082	1060	4.37	6.15
6635	03-02-2013	08-06-2021	26-02-2017	9729	3047	1563	1188	375	3.19	6.22
6663	08-06-2008	23-11-2021	08-03-2013	7185	4916	3182	1050	2132	1.46	2.25
6682	02-02-2013	14-01-2022	31-12-2016	7894	3268	1840	877	963	2.41	4.29
6684	25-12-2012	23-11-2021	28-10-2016	9482	3255	1852	1203	649	2.91	5.11
6780	05-09-2013	25-05-2021	20-11-2016	8476	2819	1647	970	677	3.00	5.14
6799	20-10-2013	10-09-2021	25-02-2017	11273	2882	1658	1298	360	3.91	6.79
6803	31-10-2013	28-04-2021	14-07-2013	8986	2736	2845	1156	1689	3.28	3.15
6881	29-09-2007	28-07-2021	27-03-2014	7198	5051	2680	1005	1675	1.42	2.68
6897	02-05-2014	31-12-2021	04-12-2016	10255	2800	1853	1403	450	3.66	5.53
7197	08-11-2012	28-02-2022	01-11-2015	8970	3399	2311	1564	747	2.63	3.88
7395	10-06-2011	27-10-2021	29-11-2016	9928	3792	1793	1267	526	2.61	5.53
7397	10-12-2012	27-06-2021	26-11-2016	7454	3121	1674	1031	643	2.38	4.45
Average				**10929**	**3953**	**2536**	**1425**	**1110**	**2.82**	**4.52**
Max				**24141**	**6105**	**5035**	**2813**	**2620**	**4.37**	**6.79**
Min				**6983**	**2736**	**1563**	**877**	**360**	**1.42**	**2.10**

HLF (Herd Life) = Date of birth to date of completion of 4th or more lactations Or date of disposal
PLF (Productive Days) = Date of first calving to total days in milk
UNPLF (Unproductive days) = Total days when buffalo not give milk from the date of first calving

9.13 Average Milk Compositions from 1st pril 2021 to 31st March 2022

Month	No. of Animals	Fat (%) (Mean ± SE)	SNF (%) (Mean ± SE)	Total solids (%)	Protein (%)	Lactose (%)
Apr, 21	NE	NE	NE	NE	NE	NE
May, 21	NE	NE	NE	NE	NE	NE
Jun, 21	72	7.68±0.11	9.95±0.03	17.63	3.85	5.36
Jul, 21	68	7.96±0.10	9.97±0.03	17.93	3.85	5.32
Aug, 21	58	7.56±0.11	9.87±0.02	17.43	3.75	5.22
Sep, 21	70	7.98±0.01	9.91±0.03	17.89	3.81	5.16
Oct, 21	72	8.26±0.14	10.05±0.03	18.32	3.72	5.56
Nov, 21	80	8.11±0.15	9.98±0.03	18.10	3.73	5.62
Dec, 21	98	8.59±0.12	9.93±0.03	18.53	3.59	5.53
Jan, 22	96	8.61±0.11	10.03±0.03	18.64	3.74	5.72
Feb, 22	96	8.74±0.10	10.03±0.04	18.77	3.67	5.55
Mar, 22	99	8.45±0.10	10.03±0.04	18.48	3.67	5.57
Overall	**81**	**8.19±0.11**	**9.98±0.03**	**18.17**	**3.74**	**5.46**

NE = Not estimated due to COVID-19

9.14: Reproductive Performance during the period 1st Apr, 2021 to 31st March 2022

Lactation / Parity	AFC (Months) (N)	SP (Days) (N)	Dry Period (Days) N	Calving Interval CI (Days) N
1	58.7 (35)	165.3 (6)	133 (6)	476.8 (6)
2		99.0 (6)	122.7 (6)	408.5 (6)
3		120.7 (9)	113.5 (9)	422.1 (9)
4		109.6 (5)	132.0 (5)	422.6 (5)
5th and above		219.0 (1)	207.0 (1)	529.0 (1)
Over all	**58.7 (35)**	**142.7 (27)**	**141.6 (27)**	**452.0 (27)**

9.14.1 Reproduction Performance Since inception of Network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
1993-1994	45.50 (44)	148.63 (97)	123.26 (98)	428.02 (98)
1994-1995	46.00 (37)	119.70 (70)	103.18 (71)	428.20 (70)
1995-1996	43.84 (27)	114.79 (72)	113.03 (72)	422.64 (72)
1996-1997	46.81 (27)	114.33 (66)	96.06 (66)	423.27 (66)
1997-1998	44.84 (34)	96.80 (59)	93.49 (59)	394.68 (60)
1998-1999	46.24 (54)	118.24 (63)	108.50 (62)	424.40 (62)
1999-2000	42.60 (29)	159.18 (82)	113.94 (52)	435.19 (52)
2000-2001	42.40 (42)	107.10 (53)	111.50 (56)	407.70 (56)
2001-2002	44.03 (34)	123.56(77)	118.65 (43)	428.12 (43)
2002-2003	44.02 (20)	140.87 (59)	82.98 (31)	405.90 (31)
2003-2004	43.87 (62)	131.65 (117)	103.59 (37)	438.58 (37)
2004-2005	43.37 (47)	126.45 (93)	106.03 (35)	427.99 (35)
2005-2006	39.90 (36)	149.06 (68)	109.61 (54)	413.31 (54)
2006-2007	41.42 (50)	131.40 (80)	113.86 (50)	419.02 (50)
2007-2008	41.82 (42)	119.61 (84)	121.95 (55)	441.01 (55)
2008-2009	40.75 (31)	130.58 (61)	102.04(21)	423.71(21)
2009-2010	41.08 (25)	145.96 (62)	107.08(30)	412.54(30)
2010-2011	41.26 (50)	145.06 (76)	119.36 (44)	442.40 (44)
2011-2012	42.13 (24)	120.66 (87)	110.83 (56)	428.33 (56)
2012-2013	41.58 (29)	123.93 (69)	96.94 (55)	401.96 (55)
2013-2014	41.87 (36)	128.37 (73)	100.73 (48)	423.74 (48)
2014-2015	40.39 (35)	134.71 (71)	111.45 (40)	420.97 (40)
2015-2016	39.29 (24)	134.03(92)	130.75 (92)	429.99 (92)
2016-2017	43.21 (29)	132.20 (54)	110.81 (27)	428.44 (27)
2017-2018	43.40 ±0.8 (44)	145.0±10.8 (37)	162.4±9.7 (37)	454.1±11.1 (37)
2018-2019	44.39 (41)	118.93 (54)	115.62 (55)	415.22 (55)
2019-2020	44.52 (37)	133.5 (60)	162.63 (60)	443.6 (60)
2020-2021	45.10 (26)	140.3 (39)	127.4 (39)	440.1 (39)
2021-2022	**58.7 (35)**	**142.7 (27)**	**141.6 (27)**	**452.0 (27)**

9.15 Milk Production and Disposal during the period Apr, 2021- Mar, 2022

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 2021	19826.0	Total milk produced was supplied to the milk plant, NDRI, Karnal		
May	18531.5			
June	16430.5			
July	15059.5			
August	14272.5			
September	15024.5			
October	19168.5			
November	22072.0			
December	25751.5			
January 2022	27007.5			
February	24164.5			
March	23011.5			
Total	**240320.0**			

9.16 Feed and fodder (Quintals) availability:

Months	Green fodder produced at Farm	Green fodder Purchased	Total
April	9952.20	-	9952.20
May	8012.57	-	8012.57
June	11617.20	-	11617.20
July	13535.53	-	13535.53
August	3482.08	-	3482.08
September	10046.10	-	10046.10
October	10868.29	-	10868.29
November	2557.65	-	2557.65
December	3283.52	-	3283.52
January	12576.39	-	12576.39
February	12155.08	-	12155.08
March	12784.54	-	12784.54
Total Green	110871.15	-	110871.15
Silage	-	-	-
Dry	1377.24	-	1377.24
Concentrate	3391.56	-	3391.56

9.17: Milk performance during during the period Apr, 2021- Mar, 2022

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 2021	88	81	169	52.07	7.5	3.9
May	81	88	169	47.92	7.4	3.5
June	75	92	167	44.91	7.3	3.3
July	71	96	167	42.51	6.8	2.9
August	68	99	167	40.72	6.8	2.8
September	70	97	167	41.92	7.1	3.0
October	85	66	151	56.29	7.2	4.1
November	95	66	161	59.01	7.8	4.9
December	100	65	165	60.61	8.3	5.0
January 2022	98	70	168	58.33	8.9	5.2
February	99	69	168	58.33	8.7	5.1
March	94	75	169	55.62	7.9	4.4
Total	**85**	**80**	**165**	**51.52**	**7.7**	**4.0**

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of Animals in Dry	Total No. of Animals	% in Milk	Wet Av. (Kg)	Herd Av. (Kg)
1993-1994	115	45	160	72.15	7.80	5.60
1994-1995	114	54	168	68.02	8.39	5.72
1995-1996	109	51	160	68.12	8.03	5.50
1996-1997	103	43	146	70.55	7.90	5.60
1997-1998	119	47	166	71.98	7.40	5.30
1998-1999	100	68	168	59.40	5.93	3.52
1999-2000	094	71	165	75.53	6.60	3.90
2000-2001	104	59	163	63.56	6.65	4.23
2001-2002	090	53	143	62.69	6.26	3.93
2002-2003	073	34	106	68.48	6.23	4.27
2003-2004	080	37	117	68.38	6.36	4.31
2004-2005	111	46	157	70.50	7.39	5.23
2005-2006	107	65	172	62.14	7.05	4.38
2006-2007	100	78	178	56.18	6.70	3.75
2007-2008	104	69	173	60.00	6.80	4.00

2008-2009	064	65	130	50.25	7.09	3.49
2009-2010	091	65	156	58.33	7.32	4.25
2010-2011	096	109	205	46.82	5.83	2.75
2011-2012	066	81	147	44.89	6.79	3.03
2012-2013	090	51	141	63.69	7.35	4.63
2013-2014	101	65	166	60.84	7.80	4.70
2014-2015	115	82	197	58.05	8.05	5.10
2015-2016	132	107	239	55.44	8.43	4.13
2016-2017	105	90	195	53.73	8.39	4.52
2017-2018	99	110	209	47.36	8.23	4.21
2018-2019	112	102	214	52.30	7.4	3.9
2019-2020	118	105	220	52.12	6.7	3.5
2020-2021	86	111	197	43.65	6.6	3.0
2021-2022	**85**	**80**	**165**	**51.52**	**7.7**	**4.0**

9.18: Bull wise daughters born (only numbers) during the period Apr, 2021- Mar, 2022

Set No.	Centre	Bull No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
14	GADVASU	2357	3	-	-
18	GADVASU	2645	2	-	-
19	GADVASU	2674	3	-	-
19	GADVASU	2759	1	-	-
14	CIRB	4196	3	-	-
18	CIRB	4905	2	-	-
19	CIRB	5181	2	-	-
19	CIRB	5320	1	-	-
19	CIRB	5232	9	-	-
19	CIRB	5246	6	-	-
14	NDRI	6044	1	-	-
19	NDRI	7601	7	-	-
	Total		**40**		

9.19 Bull wise daughters completing 1ST lactation during the Period April 2021 to March 2022

Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
2369	6974	21-10-14	19-12-19	62.83	476	3159	2252
6044	7217	16-11-15	28-08-20	58.23	263	1684	1684
N.K.	7293	16-08-16	05-10-19	38.16	591	3099	1700
4403	7298	30-08-16	16-10-20	50.26	425	2605	2146
1893	7316	20-09-16	15-06-20	45.46	347	2105	19111
4260	7344	29-10-16	14-10-20	48.20	209	1943	1943
N.K.	7385	20-11-16	13-10-20	47.43	231	1648	1648
N.K.	7409	30-11-16	13-11-20	48.13	348	2402	2269
N.K.	7432	16-02-17	26-12-20	46.96	354	2326	2190
2383	7504	11-11-17	27-09-20	35.03	321	2543	2513
2383	7505	11-11-17	30-10-20	36.13	350	2332	2230
1027	7540	22-12-17	20-09-20	33.73	381	3098	2827
2501	7563	07-02-18	10-10-20	32.53	335	2130	2023
4592	7564	09-02-18	24-10-20	32.50	321	2488	2451
2501	7574	18-03-18	01-05-21	37.50	326	2944	2915
1053	7591	23-04-18	25-11-20	31.56	365	3631	3421
N.K.	7678	30-04-16	31-08-21	64.11	204	1531	1531
N.K.	7683	30-10-15	20-09-21	71.73	184	1503	1503

Out of 18 bulls used, daughters of 03 bulls had given SLMY greater than 2700 kg in NDRI herd

9.20 Breeding bulls Selected for current set during the period Apr, 2021- Mar, 2022

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	7584	30-03-2018	6253	147	3600
2	7649	15-10-2018	2558	6735	3203

9.20.1 PT Bulls for nominated mating during the period Apr, 2021 to Mar, 2022

Bull No.	Set No.	Centre	Dams' Best yield	Sire Index	Sire index/ Breeding Value	% Superiority
4354	15	CIRB	3029.61	2589	2589	1.67
6007	15	NDRI	3837.75	2588	2588	1.61
2459	15	GADVASU	3364.15	2587	2587	1.58

9.20.2 List of breeding bulls as on 31.3.2022

Sr. No	**Bull No.**	**DOB**	**Sire No.**	**Dam No.**	**Dam's best SLMY**	**Semen doses available**
1.	6136	25-09-2009	2148	5517	4341/305	11669
2.	6379	26-08-2010	N.K.	402	3505/305	3229
3.	6405	26-01-2012	N.K.	486	2743/305	9674
4.	6409	09-02-2011	4371	490	4187/305	12475
5.	6646	07-02-2013	N.K.	6627	3533/305	6132
6.	6753	13-07-2013	858	470	3389/305	3132
7.	6822	13-12-2013	2422	490	4187/305	1338
8.	6942	23-08-2014	4439	6627	3533/305	12664
9.	7010	27-12-2014	4100	415	3068/305	7829
10.	7094	08-04-2015	N.K.	6625	3465/305	6470
11.	7147	14-08-2015	N.K.	6631	3018/305	7754
12.	7227	04-01-2016	6044	5851	3099/305	1490
13.	7277	22-07-2016	2459	6236	3508/305	1465
14.	7263	28-05-2016	6290	6625	3465/305	5008
15.	7450	14-05-2017	6409	6116	3570/305	378
16.	7584	30-07-2018	6253	6147	3600/305	2100
17.	7590	17-04-2018	3591	6122	3590/305	-
18.	7604	18-06-2018	7010	6477	3158/305	3008
19.	7545	29-12-2017	4705	6843	3050/305	650
20.	7568	24-02-2018	2501	7351	3010/305	-
21.	7619	03-08-2018	2565	6799	3171/305	15
22.	7630	05-09-2018	51	6852	3343/305	350
23.	7638	22-09-2018	4687	6795	3076/305	515
24.	7649	15-10-2018	2558	6735	3203/305	3870
25.	7511	17-11-2017	2133	470	3389/305	130
26.	7492	09-10-2017	1027	6906	2799/305	910
27.	7542	27-12-2017	2133	5620	3104/305	-
28.	7465	08-08-2017	6646	6852	3343/305	840
29.	7586	08-04-2018	2501	6946	3091/305	120
30.	7768	04-02-2019	2607	6922	3251/305	2160
31.	7784	17-03-2019	6942	6722	3234/305	160
32.	7810	15-04-2019	6942	6848	3057/305	60
33.	7911	27-11-2019	7094	6478	2996/305	-
34.	7895	23-10-2019	2558	6795	3076/305	-
35.	7710	28-11-2019	2558	7352	3015/305	-
36.	7973	15-03-2020	183	6477	3158/305	-

37.	7477	05-09-2019	6646	6255	2921/305	160
38.	7990	19-08-2020	183	6626	3991/305	-
39.	8049	24-11-2020	7147	7359	3085/305	-
40.	8054	25-11-2020	1219	6780	3006/305	-
41.	8005	06-09-2020	5147	6846	2873/305	-
42.	7994	23-08-2020	5147	6803	2800/305	-
43.	8080	04-04-2021	3591	6843	3050/305	-
44.	8082	25-02-2021	4905	7046	3228/305	-

9.21 Target achieved during the year during the period

Trait	Target	(2017-18)	(2018-19)	(2019-20)	(2020-21)	(2020-21)
Av. Age at first calving (months)	40	43.40 (44)	44.39 (41)	44.52 (37)	45.10 (26)	58.7 (35)
Av. Service period (days)	130	138 (49)	139 (77)	134 (60)	140.3 (39)	142.7 (27)
Calf mortality (0-3 months)	≤ 3 %	7.8	18.99	11.49	4.07	7.44
Wet average (kg)	≥8.5 kg	8.23	7.4	6.7	6.60	7.70
Herd average (kg)	≥5.5 kg	4.21	3.9	3.5	3.00	4.00

Activity carried out during the period

The NDRI center is involved for genetic improvement of Murrah Buffalo breed along with other centers under Network Project on Buffalo Improvement

i) **Technical Programme :**

The breeding programme in the Murrah was followed for test mating of 19th set of bulls. Eleven bull from 19th set were used for test mating and 03 proven bulls from 14th set were used for nominated mating, till March 2022. The dam's best lactation 305-day milk yield of 4 bulls of NDRI under 19th set had ranged from 3124 to 3513 kg. The dam's best lactation 305-day milk yield of bulls of NDRI under 20th set had ranged from 3203 to 3600 Kg.

ii) Targets and Achievements

The herd strength of breedable buffaloes was 226 on current (2021-22) year as compared to 252 breedable in 2020-21. Average age at first calving of buffaloes was 58.70 months. The average service period of buffaloes has been estimated as 142.70 days. The overall female conception rate in the herd was 43.46% for the buffaloes inseminated during Jan-Dec, 2020. The overall mortality during the year was only 34.616% across all age groups and 5.80% in group (0-3 months). The wet and herd averages were 7.7 and 4.0 kg, respectively. The average Milk Fat, SNF, Total Solid, Protein, and Lactose were estimated as 8.19, 9.98, 18.17, 3.74 and 5.4%, respectively.

Selection of bulls

Total 04 elite Murrah male calves were reserved on the basis of Expected Predicted Difference and dam's best 305day or less lactation milk yield, breed characteristics and physical conformity for selection of young male calves for future breeding. Finally, two young bull with their dam's best 305 days lactation milk yield of ranged from 3203 kg in first lactation to 3600 kg was reserved. On the basis of 15th set evaluation out of three top ranking bulls, the Bull no. 6007 from NDRI ranked second and was declared as proven bull and selected for nominated mating from 1st January 2022 to 30th June 2023.

Progeny Test Evaluation – Set-wise

The information on 305 days milk yield of daughters completing first lactation during 2021-22 were collected and compiled for genetic evaluation of Murrah bulls.

Technologies developed / Success story(s)

Supply of Quality germplasm

The NDRI Centre has produced a total 97751 doses of frozen semen, out of which 12868 doses from four bulls of 19th set and 15240 doses from 20th set during the period. The centre has supplied 21395 doses of frozen semen to other centers and field units, and 30187 doses were sold. In addition, doses of semen were supplied from ABRC for research purpose in the institute, though sale to farmers and other dairy development organizations during the period.

The germplasm of genetically superior progeny tested proven bulls are being used on elite cows in organized herds for production of high-pedigreed bulls for further multiplication and production of superior germplasm and establishment of elite herds. Superior semen of proven and high-pedigreed bulls of NDRI center is being used by various dairy development agencies and dairy farmers for bringing genetic improvement of Murrah buffaloes.

Bulls for elite mating

The breeding programme in the herd was followed for nominated mating using semen of five proven Murrah Bulls. About 18 Murrah buffaloes were identified as elite animals having SLMY greater than 2700 kg. The average best lactation milk yield of elite Murrah buffaloes was 3617 kg which was 39.81% higher than the herd average. The best lactation milk yield of elite Murrah buffaloes ranged between 2765 kg to 3617 kg in 305 days. Forty daughters and 64 male calves were born in the herd of which 9 female and 7 males were born to elite dams and proven sires. Total 240320 kg milk was produced by average 110 milch animals during the year.

Gaps/ Constraints, if any

1. The center has faced the impact of the constraint of high mortality in Murrah happened during 2019-20. The number of elite females has been dropped.
2. The center could not utilize the funds under the head equipment as final list of approved items was not received during the FY 2021-22.

Future programme

The efforts will continue to further improving the AFC, CI, Wet average performance of buffaloes for achieving the targets specified in the project.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC		Closing Balance
Total	ICAR Share		ICAR Share	State Share	
19.00	16.00+3.00*	19.00	16.21727	0.00	(+) 2.78273

* Released ICAR Share for SCSP

Herd Performance

Herd strength was 420 out of which 226 were breedable buffaloes (>2year). During the period 104 calving took place consisting of 64 males, 40 females, 6 still births and 4 abortions. The calf mortality (0-3 months) was 7.44 % higer than the target ≤ 3 %. Female conception improverd from 42.77 percent to 43.46 percent. During the report period 15160 semen doses were produced and 7625 frozen semen doses were consumed /distributed at farm and field.

Average lactation milk production performance increased from 2390 kg (90) to 2587 kg (85); 305 days or less days average milk yield increased from 2199 kg (90) to 2436 kg (85), Lactation length was 320 days (85). Age at first calving increased from 45.10 months (26) to 58.70 months (35), Average service period increased from 140 days (39) to 143 days (27), Average dry period increased from 127 days (39) to 142 (27) and average calving Interval 440 days (39) to 452 days (27). The centre wet average and herd average improved from 2020-21 to 2021-22 from 6.6 kg to 7.7 kg and 3.0 kg to 4.0 kg respectively. During the report period 51.52 percent animals were in milk as compared to 2020-21 as 43.65 percent.

Accomplishment and Targets Achieved:

Sr.No.	Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
1	Av. AFC (Months)	40.0 months	43.40 (44)	44.39 (41)	44.52 (37)	45.10 (26)	58.7 (35)
2	Av. service period (Days)	130 days	138.2 (49)	139 (77)	133.5 (60)	140.3 (39)	142.7 (27)
3	Calf mortality (0-3 months)	≤ 3 %	15.72 %	18.99 %	11.49 %	4.07 %	7.44 %
4	Wet average (Kg)	≥ 8.50 kg	8.23 kg	7.4 kg	6.7 kg	6.60 kg	7.70 kg
5	Herd average (Kg)	≥ 5.50 kg	4.21 kg	3.9 kg	3.5 kg	3.00 kg	4.00 kg

Recommendations:

- Emphasis to reduce the Average sevice period, Dry period and calving interval.
- Continuous efforts should be made to enhance the production performance traits of buffaloes.
- Calf mortality is high and required proper care and management of calves

ICAR- INDIAN VETERINARY RESEARCH INSTITUTE, IZATNAGAR
Report Period: 2020-21

1. Name of centre : I.C.A.R.-I.V.R.I., Izatnagar
2. Project Code : OXX00185
3. Project Title : Network Project on Buffalo Improvement
Subproject : Performance recording and improvement of Murrah buffalo
4. Date of Start : 01.07.1993
5. Objectives :

i. To establish elite herd of 150 Murrah for the production of genetically superior young bulls.
ii. To evaluate sires through institutional / associated herd progeny testing scheme
iii. To produce, test, propagate and conserve high genetic merit male germplasm.

6. Technical Programme :

a) Establishment and maintenance of an elite herd of Murrah buffalo breed with a herd strength of 150 breedable females
b) Selection and testing of minimum 15 bulls of Murrah breed in every 18 / 24 months cycle.
c) Production of minimum 10,000 (Murrah) frozen semen doses from each test bull.
d) Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated.
e) Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
f) Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
g) Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days & 1500 kg in Murrah) and Peak yield, milk yield per day of herd life (total milk produced from date of birth till completion of 4^{th} or more lactation).
h) Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
i) Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
j) Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Staff associated with the project:

Discipline	Name of Scientist / Staff	Status PI/Co-PI/ Associated)
AGB	Dr. A.K.S. Tomar, Pr. Scientist	Principal Investigator
	Dr. G.K. Gaur, Pr. Scientist	Project Associate
ARGO	Dr. S. K. Ghosh, Pr. Scientist	Project Associate
	Dr. M.K. Patra, Scientist	Project Associate (w.e.f. 2017-18)
ANFT	Dr. Narayan Dutt, Pr. Scientist	Project Associate
LPM	Dr. Triveni Dutt, Director	Project Associate
	Dr. H.O. Pandey, Sci. (LPM)	Project Associate (w.e.f. 2017-18)
Health / Others	Dr. (Er.) Mukesh Singh, Pr. Scientist (FMP)	Project Associate
	Dr Geeta Chauhan, Pr. Scientist, LPT Div.	Project Associate (up to 26th June, 2021)
	Dr. Rajeev Ranjan Kumar, Sr. Scintist, PPT Div./ Dr. A. K. Biswas, Sr. Scientist, LPT	Project Associate (Dr. Rajeev Ranjan Kumar, Sr. Scientist w.e.f. 26th June, 2021 to March, 2022 ;)
	Dr. S.K. Dixit, Pr. Scientist (Medicine) Dr. K. Mahendran, Scientist (Medicine)	Project Associate (Dr. S.K. Dixit, Pr. Scientisttransferred during 2021-22; Dr. K.

		Mahendran, Scientist joined during 2021-22)
	Scientist - Division of Surgery (Rotational arrangement)	Project Associate
	Dr. Om Singh, Sr. Scientist (Agronomy)	Project Associate
No. of staff		
Administrative staff		None
Technical staff		None
Contractual staff (~~RA / SRF~~ / YP-I, ~~YP II~~)		One (up to 31st March, 2022) - continue

8. Financial Statement: Head wise budget allocation and utilization; revenue receipts

Financial Year	Head wise Budget allocated (lakh Rs.)			Utilization (Lakh Rs.)			Revenue Generated (Lakh Rs.)	Remarks/ Details
	Recurring contingency	Non-recurring (Equipment)	Total	Recurring contingency	Non-recurring (Equipment)	Total		
2021-22	17.00*	1.00*	18.00	16.47397	0.25880	16.73277	62.08160	Through sale of 155204 kg milk
							4.44800	Sale of 10 buffaloes
Grand Total	**17.00***	**1.00**	**18.00**	16.47397	**0.25880**	**16.73277**	66.5296	Sale of 9290 frozen semen doses of Murrah bull by GP center

* includes Rs. 3.00 lakh (recurring contingency) for SCSP expenditure

9.1 Herd Strength (2021-22)

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P	T	D	T	S	E	CB
	Female								
1.	Below 3 months	02	29		2	27*	-	-	2
2.	3-12 months	25	-	27*	-	27*	-	-	25
3.	1-2 years	28	-	27*	-	28*	-	-	27
	Above 2 years	35	-	28*	-	21*	-	-	42
4.	Buffaloes in Milk	75	-	21*	2	14*	2	-	78
5.	Buffaloes Dry P /NP	31	-	14*	4	-	5	-	36
	Sub Total	**196**	**29**	117*	**8**	**117***	**7**	**-**	**210**
	Males								
1.	Below 3 months	4	41	-	-	38*	-	-	7
2.	3-12 months	45	-	38*	-	2 47*	-	-	34
3.	1-2 years	11	-	47*	-	23 1*	-	-	44
	Above 2 years	2	-	1*	-	2*	-	-	1
4.	Breeding bulls	8	-	2*	-	1*	3	-	9
5.	Bullocks / Teasers / others	1	-	1*	-	-	-	-	2
	Sub Total	**55**	**50**	**89***	**-**	**25 89***	**3**	**-**	**97**
	Grand Total	**243**	**77**	**206***	**8**	**25 206***	**10**		**307**

OB = Opening Balance as on 1st April 21 D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T/* = Internal Transfer ** Purchased CB = Closing Balance as on 31st March

9.2 Calving statistics including abnormalities (2021-22)

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse
April 21	-	1	-	-	-	-	-
May	1	-	1	-	-	-	-
June	2	-	1	-	-	1	1
July	3	3	-	3	-	2	-
August	5	8	-	3	1	3	-
September	7	6	-	1	-	2	-
October	4	3	-	-	-	1	-
November	6	3	-	2	1	3	-
December	6	3	-	1	-	-	-
January 22	3	-	-	-	-	-	-
February	4	2	-	-	-	-	-
March	-	-	-	-	-	-	-
Overall	**41**	**29**	**2**	**10**	**2**	**12**	**1**

*Unseen Abortions; Sex ratio (Male : Female)= 58.57 : 41.43; SB% = 2.86%; Abortion% = 14.28%

9.3. Disposal of Animals (2021-22)

Female	**Primary cause of disposal**							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves								
0 to 3 months	-	-	-	-	-	2	-	2
3-12 months	-	-	-	-	-	-	-	-
Heifers								
1-2 years	-	-	-	-	-	-	-	-
> 2 years	-	-	-	-	-	-	-	-
Buffaloes		-			-	-	-	
Milch	-	1	-	-	1	2	-	4
Dry	-	1	3	-	1	4	-	9
Sub Total	**-**	**2**	**3**	**-**	2	**8**	**-**	**15**
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	-	-	-	-	-	-	-	-
3-12 months	-	-	-	-	-	-	2	2
1 to 2 year	-	-	-	-	-	-	23	23
>2 year	-	-	-	-	-	-	-	-
Breeding bulls	3							
Bullock/Teaser/Others	-	-	-	-	-	-	-	-
Sub Total	3	-	-	-	-	-	25	**28**
Grand Total	**3**	**2**	**3**	**-**	**2**	**8**	**25**	**43**

9.4. Mortality during the Period 1st April 2021 to 31st March, 2022

Sex	**Female**						**Male**					**Overall Herd**
Class	**0-3 m**	**3-12 m**	**1-2 yr**	**> 2 yr**	**Milk + Dry**	**Overall Female**	**0-3 m**	**3-12 m**	**1 -2 Yr**	**>2 yr**	**Overall Male**	
No.	31	37	44	55	230	**225**	45	61	67	85	**125**	**350**
Died	2	-	-	-	6	**8**	-	-	-	-	**-**	**8**
%	6.45	-	-	-	2.61	**3.56**	-	-	-	-	**-**	**2.29**

% Mortality = 2.63%

9.5. Causes of Mortality (quarter wise) during the period (2021-22)

Particulars	1st quarter	2nd quarter	3rd quarter	4th quarter	Total
A. Respiratory System:					
Pneumonia/Broncho Pneumonia/Chronic Supp. Pneumonia	-	-	-	-	-
Hemorrhagic Enteritis /Gastroenteritis	-	-	-	-	-
B. Digestive System:					
Septicemia & Toxemia/ Enteritis leading to Septicemia, Acute Abomasamitis & Septicemia , Fib. Pleuritis, Acute Peritonitis Septicemia due to Navel ill/Joint ill	-	1	-	-	1
C. Others					
Still birth / NSD/Bacterial infection/Premature birth	2	-	1	-	3
Splenic Rupture /acute Selenitis	-	-	-	-	-
P.M. report not available	-	-	-	-	-
Chronic supp Myositis & peritonitis	-	-	-	-	-
Abortion/ NSD /bacterial infection	-	7	2	-	9
Protein Enteropathy or Nephropathy	-	-	-	-	-
Post mortem report not available	-	1	3	3	7
Total	**2**	**9**	**6**	**3**	**20**

9.8 Prophylactic measures undertaken (2021-22)

Vaccination	No. of animals		Screen-ing	No. of animals		No of animals treated for Parasitism etc.	
	Available	Inoculated		Tested	Result		
F.M.D.	-	826	Faecal samples	8	4 (-ve) 3 (+ve) & 1 N.A.	Postnatal Coverage	70
H.S.	-	254				Endoparasites	352
Brucella	-	40	Blood sample	3	Report not available	Coccidiostat	167
						Anthelmentics	428
LSD	-	193	Serum	1	Report not available	Feed supplement	115
						Liq. Vitamin supplement	136

9.7. Female Conception Rate During the Period April 2021 to March 2022

AI No.→	1st			2nd			3rd			4th			5th & above			Overall		
Parity↓	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**
Heifers	24	11	45.83	6	0	0.00	7	5	71.43	2	0	0.00	2	2	100.0	41	18	**43.90**
Adults	84	39	46.43	46	22	47.83	23	11	47.83	11	1	9.09	10	6	60.00	174	79	**45.40**
Overall	**108**	**50**	**46.30**	**52**	**22**	**42.31**	**30**	**16**	**53.33**	**13**	**1**	**4.69**	**12**	**8**	**66.67**	**215**	**97**	**45.12**

AIs = No. of animals inseminated; C = No. of animals conceived; CR % = Conception rate%

9.8 Quarter-wise conception rate (2021-22)

Quarter	No. of A I	Preg. animals	CR %
January – March (Previous year)	13	6	46.15
April - June	30	16	53.33
July - September	80	35	43.75
October- December	92	40	43.48
Overall	**215**	**97**	**45.12**

9.9. Bull wise conception rate (inseminated during April, 2021 to March 2022, 2021-21)

Sl. No	Bull No.	Set No.	Total No of AI	Total Conceived	CR %
1.	B-1315	19th	14	6	42.86
2.	B-2674	19th	6	3	50.00
3.	B-2737	19th	9	3	33.33
4.	B-2759	19th	8	2	25.00
5.	B-5181	19th	11	7	63.64
6.	B-5232	19th	19	8	42.11
7.	B-5246	19th	15	8	53.33
8.	B-5310	19th	20	4	20.00
9.	B-5320	19th	7	4	57.14
10.	B-5333	19th	17	10	58.82
11.	B-5374	19th	7	5	71.43
12.	B-7604	19th	14	7	50.00
13.	B-7649	19th	18	6	33.33
14.	B-5427	20th	25	14	58.33
15.	B-7584	20th	25	10	40.00
Over all			**215**	**97**	**45.12**
No. of services per conception			**2.22 (176/97)**		

9.10 Bull Wise Semen Stock (April, 2021 to March, 2022, 2021-22)

Sl. No.	Set No.	Bull No	Opening balance (1st April, 2021	Semen Doses received	Doses used / Consumption	Balance (as on 31/03/2022)
1.	19th	B-1315	0.0	75	72	03
2.	19th	B-2674	05	25	30	00
3.	19th	B-2737	19	25	43	01
4.	19th	B-2759	08	25	30	03
5.	19th	B-5181	09	25	34	0.0
6.	19th	B-5232	0.0	75	73	02
7.	19th	B-5246	0.0	75	70	05
8.	19th	B-5310	0.0	75	75	0.0
9.	19th	B-5320	02	25	27	0.0
10.	19th	B-5333	0.0	75	72	03
11.	19th	B-5374	08	25	33	0.0
12.	19th	B-7604	0.0	75	75	0.0
13.	20th	B-5427	0.0	100	100	0.0
14.	20th	B-7584	0.0	100	100	0.0
15.	20th	B-7649	0.0	100	74	26
Grand Total			**51**	**1206**	**908**	**43**

9.11.1 Average body weight (kg) since inception

Year	Birth	3 m	6 m	12 m	18 m	24 m	At AFC
Female							
1997-98	24.84±0.59 (19)	92.50±1.77 (18)	123.75±0.71 (12)	229.29±2.09 (14)	254.50±0.26 (10)	366.25±0.50 (8)	-
2002-03	29.10±0.98 (09)	80.00±7.35 (04)	107.08±7.22 (12)	195.62±10.32 (16)	277.14±10.53 (07)	347.27±13.71 (11)	-
2003-04	31.44±0.98 (17)	54.50±2.26 (10)	98.43±6.43 (16)	190.00±12.32 (11)	297.69±10.38 (13)	342.81±10.38 (16)	-
2004-05	30.44±1.06 (34)	59.00±3.13 (15)	95.00±8.05 (10)	175.00±11.30 (06)	271.66±12.91 (12)	381.00±13.24 (10)	-
2005-06	30.75±0.83 (29)	57.66±1.99 (15)	85.71±10.09 (21)	173.42±9.82 (19)	280.38±12.42 (13)	355.45±11.81 (11)	-
2006-07	31.39±0.89 (28)	59.44±2.69 (18)	94.33±4.84 (15)	180.76±9.53 (13)	268.68±9.59 (19)	355.75±10.10 (20)	-
2007-08	30.30±0.92 (29)	66.50±1.79 (30)	107.86±4.83 (28)	179.04±6.33 (26)	245.67±8.75 (15)	313.64±7.99 (11)	475.38±21.28 (13)
2008-09	30.45±0.58 (33)	63.40±2.06 (25)	100.00±3.41 (23)	178.25±8.03 (20)	241.11±10.11 (27)	319.29±11.42 (21)	477.81±18.97 (16)
2009-10	30.59±0.75 (37)	77.11±2.32 (26)	123.80±6.20 (21)	186.31±9.09 (19)	263.69±1176 (23)	343.75±14.64 (20)	509.00±18.49 (15)
2010-11	29.52±5.31 (34)	84.43±7.75 (16)	122.81±7.75 (16)	230.43±6.46 (23)	292.10±5.03 (38)	344.44±7.31 (18)	483.75±16.70 (20)
2011-12	32.09±0.96 (23)	58.18±2.94 (19)	114.69±4.97 (16)	223.06±9.42 (18)	311.25±7.65 (16)	377.90±6.53 (24)	498.44±16.72 (16)
2012-13	33.63±0.78 (24)	69.96±2.46 (24)	126.30±4.82 (23)	233.53±13.84 (17)	334.62±8.98 (13)	391.25±8.84 (16)	535.71±25.87 (07)
2013-14	32.83±1.13 (23)	65.41±2.79 (22)	121.96±4.38 (23)	253.04±10.54 (23)	330.45±8.49 (22)	409.69±10.64 (16)	539.58±23.83 (12)
2014-15	34.75±0.72 (29)	76.44±3.96 (27)	108.33±4.27 (15)	227.38±7.63 (21)	342.86±5.52 (21)	412.80±6.67 (25)	530.56±20.14 (18)
2015-16	30.69±1.30 (26)	63.11±2.13 (18)	96.14±2.94 (22)	205.54±7.78 (28)	311.46±11.05 (24)	411.50±8.44 (20)	505.56±27.33 (09)
2016-17	36.38±0.94 (29)	75.95±2.71 (22)	108.68±3.58 (19)	206.58±9.51 (19)	303.25±7.77 (20)	378.04±9.90 (28)	546.58±9.88 (19)
2017-18	33.46±0.99 (24)	76.42±1.80 (31)	111.55±2.94 (29)	200.00±5.43 (28)	295.23±10.43 (22)	378.89±10.57(18)	320.91±10.30 (23)
2018-19	33.71±0.66 (28)	72.46±2.79 (13)	118.20±2.58 (25)	215.00±6.42 (22)	303.97±5.18 (29)	392.14±6.58 (28)	647.06±14.97 (17)
2019-20	33.52±0.61 (29)	61.22±2.11 (32)	115.56±4.21 (27)	219.17±4.81 (30)	282.40±7.67 (25)	378.86±6.47 (22)	595.50±19.72 (20)
2020-21	34.04±0.95 (27)	81.96±2.94 (23)	120.33±2.93 (30)	181.61±5.11 (28)	273.15±5.95 (27)	340.69±7.15 (29)	565.43±14.92 (23)
2021-22	34.59±0.78 (29)	72.63±1.51 (27)	122.07±2.67 (29)	216.52±3.72 (27)	282.00±4.00 (30)	350.89±5.95 (28)	583.91±14.56 (23)
Male						**Adults**	
2002-03	29.00±0.80 (5)	82.00±8.77 (5)	-	-	-	-	
2003-04	31.89±0.84 (23)	62.50±2.53 (8)	99.06±6.43 (16)	203.33±23.60 (3)	355.00±21.61 (3)	390.00 (1)	
2004-05	34.60±1.17 (28)	62.20±2.43 (25)	100.33±6.57 (15)	200.83±11.30 (6)	-	355.00 (1)	
2005-06	32.64±0.77 (34)	58.23±1.87 (17)	107.61±10.09 (21)	199.61±11.87 (13)	280.38±12.42 (13)	383.00±17.52 (5)	
2006-07	32.56±1.01 (22)	68.12±2.86 (16)	102.27±5.66 (11)	210.71±12.99 (7)	290.00±29.57 (02)	360.00 (1)	
2007-08	30.71±0.85 (34)	68.97±1.57 (39)	116.54±4.09 (39)	214.67±8.33 (15)	314.00±15.15 (05)	390.00±11.86 (5)	
2008-09	31.70±0.53 (40)	61.61±1.85 (31)	103.15±3.14 (27)	185.79±8.24 (19)	230.00±21.45 (06)	392.50±37.01 (2)	
2009-10	30.70±0.83 (30)	70.00±2.65 (20)	101.47±6.89 (17)	189.16±8.09 (24)	275.31±14.11 (16)	319.00±29.28 (5)	
2010-11	31.15±5.39 (33)	73.00±6.46 (23)	123.87±5.57 (31)	220.66±8.00 (15)	292.22±7.31 (18)	360.00±13.87 (5)	
2011-12	33.42±0.83 (31)	69.23±2.61 (24)	132.77±4.68 (18)	230.00±14.13 (8)	305.00±21.63 (2)	-	
2012-13	37.53±0.71 (29)	68.91±2.52 (23)	126.95±5.30 (19)	235.00±52.18 (8)	-	-	
2013-14	33.91±0.93 (34)	76.55±2.35 (31)	128.33±4.28 (24)	241.50±15.98 (10)	290.00±23.01 (3)	-	
2014-15	38.12±0.74 (34)	78.39±1.89 (23)	111.52±4.08 (23)	219.55±12.60 (11)	-	340.00±65.00 (2)	
2015-16	33.70±0.99 (33)	71.73±2.16 (26)	104.48±3.75 (29)	248.33±11.33 (18)	383.33±44.10 (3)	-	
2016-17	37.11±1.09 (28)	73.35±2.74 (23)	117.41±4.10 (27)	238.64±8.18 (11)	389.55±9.08 (11)	437.50±12.50 (2)	
2017-18	32.05±1.70 (22)	79.30±2.70 (23)	113.10±4.33 (21)	191.32±8.14 (19)	291.00±9.71 (10)	367.50±17.50 (5)	
2018-19	35.90±0.81 (31)	77.23±2.33 (13)	127.50±3.24 (26)	225.71±9.97 (7)	320.00 (2)	-	
2019-20	34.71±0.82 (34)	66.16±2.40 (38)	111.91±3.15 (34)	201.17±5.91 (23)	298.00±9.70 (5)	-	

2020-21	35.02±0.62 (50)	76.53±1.80 (47)	118.06±2.85 (36)	194.81±6.73 (27)	282.00±11.89 (5)		
2021-22	36.55±0.92 (40)	77.58±1.59 (33)	121.42±2.40 (43)	210.03±4.10 (40)	271.33±10.62 (15)	-	-

Overall Body Weight (in kg) at							
Year	**At Birth**	**3 Months**	**6 Months**	**12 Months**	**18 Months**	**24 Months**	**At AFC**
1992-93	26.30 (30)	60.78 (11)	120.30 (11)	201.43 (11)	265.31 (08)	350.41 (10)	-
1993-94	25.81±1.51 (16)	63.95±8.00 (19)	102.67±10.13 (15)	170.59±13.06 (17)	263.82±24.35 (17)	319.47±27.86 (09)	-
1994-95	25.97±0.71 (31)	51.52±2.39 (04)	77.12±1.39 (26)	148.82±3.66 (34)	217.00±7.88 (15)	284.05±7.32 (16)	-
1995-96	24.25±0.88 (08)	56.67±1.67 (03)	105.00 (01)	165.00±5.00 (05)	180.33±6.14 (15)	286.25±4.31 (24)	-
1996-97	24.38 (16)	86.67 (03)	117.50 (04)	217.50 (02)	248.15 (04)	368.00 (04)	-
1997-98	24.84 (19)	92.50 (18)	123.75 (12)	224.29 (14)	254.50 (10)	366.25 (08)	-
1998-99	26.98 (20)	89.50 (21)	125.41 (13)	220.00 (06)	240.30 (07)	350.81 (08)	-
1999-00	23.60±0.36 (20)	43.60±1.37 (10)	80.46±4.74 (11)	153.33±7.91 (09)	245.00±14.72 (07)	310.67±9.33 (15)	-
2000-01	24.36±0.39 (33)	50.55±3.71 (11)	99.28±3.14 (14)	195.00±5.44 (10)	261.50±8.43 (10)	342.50±9.40 (08)	-
2001-02	26.73±1.03 (11)	59.37±2.85 (08)	59.37±4.08 (09)	183.63±9.06 (11)	284.23±12.70 (13)	359.44±10.69 (09)	-
2002-03	29.10±0.98 (09)	80.00±7.35 (04)	107.08±7.22 (12)	195.62±10.32 (16)	277.14±10.53 (07)	347.27±13.71 (11)	-
2003-04	31.66 (40)	58.50 (18)	98.75 (32)	196.66 (14)	326.34 (16)	366.40 (17)	-
2004-05	32.52 (62)	60.60 (40)	97.66 (25)	187.91 (12)	271.66 (12)	368.00 (11)	501.50± (10)
2005-06	31.77 (63)	57.96 (32)	96.66 (42)	186.51 (32)	300.19 (20)	369.22 (16)	600.50± (10)
2006-07	31.98±0.67 (50)	63.78±1.96 (34)	98.30±3.72 (26)	195.74±8.05 (20)	279.34±15.54 (21)	357.87±23.15 (21)	588.37±15.69 (52)
2007-08	30.53±0.62 (63)	67.74±1.19 (69)	112.19±3.17 (67)	196.85±5.23 (41)	279.83±8.75 (20)	351.82±7.15 (16)	617.89±14.28 (57)
2008-09	31.07±0.39 (73)	62.51±1.38 (56)	101.57±2.32 (50)	182.02±5.75 (39)	235.56±11.86 (33)	355.89±19.37 (23)	477.81±18.97 (16)
2009-10	30.64±0.56 (67)	73.55±1.76 (46)	112.64±4.64 (38)	187.74±6.08 (43)	269.50±9.18 (39)	331.37±16.36 (25)	509.00±18.49 (15)
2010-11	30.34±3.79 (67)	78.71±5.04 (39)	123.34±4.77 (46)	225.55±5.14 (38)	292.16±4.43 (56)	352.22±7.84 (23)	483.75±16.70 (20)
2011-12	32.75±0.63 (54)	63.40±1.95 (43)	123.73±3.41 (34)	226.53±7.84 (26)	308.13±7.21 (18)	377.90±6.53 (24)	498.44±16.72 (16)
2012-13	35.58±0.53 (53)	69.43±1.76 (47)	126.63±3.57 (42)	234.26±11.42 (25)	334.62±8.98 (13)	391.25±8.84 (16)	535.71±25.87 (7)
2013-14	33.37±0.72 (57)	70.98±1.79 (53)	125.15±3.06 (47)	247.27±8.80 (33)	330.45±7.97 (25)	409.69±10.64 (16)	539.58±23.83 (12)
2014-15	36.57±0.56 (63)	77.34±2.29 (50)	110.26±2.96 (38)	224.69±6.53 (32)	342.86±5.52 (21)	407.41±8.00 (27)	530.56±20.14 (18)
2015-16	32.37±0.81 (59)	68.20±1.66 (44)	100.88±2.53 (51)	222.28±7.13 (46)	319.44±11.50 (27)	411.50±8.44 (20)	505.56±27.33 (9)
2016-17	36.74±0.71 (57)	74.62±1.91 (45)	113.80±2.87 (46)	218.33±7.23 (30)	333.87±9.55 (31)	382.00±9.65 (30)	546.58±9.88 (19)
2017-18	32.78± 0.96 (46)	77.65± 1.54 (54)	112.20± 2.47 (50)	196.49± 4.60 (47)	293.91± 7.71 (32)	377.75± 9.60 (20)	527.35±17.99 (23)
2018-19	34.86±0.54 (59)	74.85±1.84 (26)	122.94±2.16 (51)	217.59±5.42 (29)	305.01±4.89 (31)	392.14±6.58 (28)	647.06±14.97 (17)
2019-20	34.16±0.52 (63)	63.90±1.64 (70)	113.52±2.55 (61)	211.36±3.90 (53)	285.00±6.63 (30)	378.86±6.47 (22)	595.50±19.72 (20)
2020-21	34.68±0.52 (77)	78.31±1.57 (70)	119.09±2.04 (66)	188.09±4.26 (55)	274.53±5.32 (32)	340.69±7.15 (29)	565.43±14.92 (23)
2021-22	35.72±0.63 (69)	75.35±1.14 (60)	121.68±1.78 (72)	212.64±2.88 (67)	278.44±4.42 (45)	350.89±5.95 (28)	583.91±14.56 (23)

9.12 Average Production Performance of Buffaloes Completing their Lactation (2021-22)

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	13	2317.50±107.82	357.77±18.29	2122.94±66.52	8.95±0.41
2nd	18	2576.74±118.54	347.39±14.66	2393.59±80.04	11.99±0.67
3rd	10	2474.72±175.20	327.00±23.92	2343.65±151.72	12.08±0.86
4th	5	2522.48±211.81	343.60±27.49	2387.96±151.41	11.62±1.59
5th & above	13	2225.09±76.16	318.46±11.58	2156.18±67.03	10.64±0.35
Overall	**59**	**2420.25±58.80**	**339.53±7.99**	**2272.70±44.35**	**11.01±0.34**

* 319 kg milk is added in pail yields on account of milk suckled by calf

LL>=150 d & MY>=1500 (Based on DOD data)

9.12.1 Average production performance of Buffaloes since Inception of Network

Year	Lact. Length (days)	TLMY (Kg)*	SLMY (kg)*	Peak yield (kg)
1992-93	297.91±9.24 (34)	1502.60±57.03 (34)	1457.72±48.65 (34)	07.88±0.35 (26)
1993-94	276.32±8.46 (28)	1557.30±57.07 (28)	1537.17±49.53 (28)	09.05±0.33 (30)
1994-95	259.25±6.62 (32)	1546.66±51.03 (32)	1535.94±40.61 (32)	09.58±0.30 (35)
1995-96	323.15±7.65 (27)	1522.72±55.66 (27)	1456.50±51.77 (27)	07.40±0.39 (21)
1996-97	341.10±13.41 (20)	1738.33±94.52 (20)	1629.27±76.30 (20)	07.91±0.38 (23)
1997-98	320.35±19.41 (23)	1830.99±119.31 (23)	1714.57±95.93 (23)	08.34±0.39 (22)
1998-99	320.05±12.09 (22)	1980.32±97.68 (22)	1980.32±97.68 (22)	08.45±0.39 (21)
1999-00	309.94±11.65 (18)	2106.83±107.58 (18)	2025.83±98.47 (18)	09.78±0.35 (26)
2000-01	277.15±27.11 (20)	2011.15±169.51 (20)	1897.80±147.16 (20)	10.56±0.39 (22)
2001-02	317.42±9.75 (28)	2090.67±78.93 (28)	2101.89±75.21 (19)	10.12±0.36 (28)
2002-03	298.55±9.95 (05)	1999.43±88.39 (55)	2043.49±66.45 (55)	10.73±0.45 (55)
2003-04	306.51±14.68 (26)	2070.94±98.94 (26)	2103.31±118.1 (26)	10.99±0.68 (26)
2004-05	299.05±8.98 (31)	2182.47±92.90 (31)	2216.03±86.06 (31)	11.25±0.47 (31)
2005-06	307.66±9.70 (45)	2166.92±92.42 (45)	2217.55±89.44 (32)	09.96±0.62 (45)
2006-07	319.85±6.96 (43)	2338.20±89.28 (43)	2412.86±88.60 (27)	11.00±0.43 (43)
2007-08	296.51±3.93 (56)	2379.09±66.65 (56)	2525.47±109.09 (28)	11.89±0.33 (56)
2008-09	291.89±4.87 (43)	2257.76±49.49 (43)	2208.95±106.07 (16)	11.00±0.28 (43)
2009-10	298.50±6.77 (51)	2418.25±77.48 (51)	2570.48±91.81 (26)	11.82±0.35 (51)
2010-11	286.40±4.89 (56)	2157.78±64.94 (56)	2136.48±63.14 (56)	11.16±0.38(56)
2011-12	308.75±7.72 (49)	2208.41±70.08 (49)	2276.82±82.85 (27)	11.54±0.37(49)
2012-13	316.43±8.41(38)	2249.40±8.46 (38)	2242.31±108.05(20)	11.01±0.34(38)
2013-14	304.27±7.95 (47)	2113.36±56.07 (47)	2037.79±62.44 (47)	11.52±0.25 (47)
2014-15	288.81±8.02 (53)	2188.82±55.81 (53)	2135.85±51.77 (53)	10.89±0.31 (53)
2015-16	298.47±8.99 (51)	2382.24±74.18 (51)	2301.49±65.44 (51)	12.30±0.35 (51)
2016-17	305.09±8.04 (55)	2280.66±80.82 (55)	2194.19±72.83 (55)	10.96±0.34 (55)
2017-18	320.76±11.12 (50)	2178.88±82.43 (50)	2128.58±56.25 (45)	10.14±0.30 (50)
2018-19	344.43±15.43 (40)	2387.44±84.17 (40)	2204.67±68.49 (40)	10.54±0.28 (40)
2019-20	325.92±8.43 (63)	2404.94±65.15 (63)	2307.40±50.75 (60)	11.04±0.24(63)
2020-21	349.51±10.77 (57)	2410.76±50.44 (57)	2224.41±37.11 (57)	10.63±0.24 (57)
2021-22	339.53±7.99 (59)	2420.25±58.80 (59)	2272.70±44.35 (59)	11.01±0.34 (59)
* 319 kg milk is added in pail yields on account of milk suckled by calf				

9.12.2 Herd Life Production (up to 4th Lactation) during 2021-22

Period	LTMY (kg)	Productive Life (d)	Productive Days (d)	Unproductive Days (d)	MY/day of HFL (kg/d)	Herd Life (d)	MY/day of Productive Life (kg/d)
2017-18	12853.87	2599.74	1719.32	880.42	3.33	3874.26	5.14

2018-19	13721.90	2680.92	1805.25	875.67	3.50	3895.50	5.21
2019-20	13804.73	2707.04	1864.44	842.60	3.53	3904.96	5.28
2020-21	12408.70	2516.67	1715.00	801.58	3.30	3688.88	4.99
2021-22	12761.10	2474.68	1733.00	741.77	3.46	3666.91	5.16

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. or date of disposal); Productive Days (date of first calving to total days in milk), Unproductive days (total days when buffalo not give milk from the date of first calving)

9.13 Average Milk Composition from April 2021 to March 2022

Month	No. of Samples	% Fat	SNF (%)	Total Solids (%)
March,2021	73	6.7	9.51	16.22
April, 2021				
May, 2021	65	7.06	9.35	16.42
June, 2021				
July, 2021	53	7.72	9.59	17.31
August, 2021				
September, 2021	63	7.06	9.43	16.49
October, 2021				
November, 2021	69	7.47	9.74	17.22
December, 2021				
January, 2022				
February, 2022	81	6.8	9.56	16.36
Overall	**404**	**7.135**	**9.53**	**16.67**

9.14 Reproductive Performance

Lactation / Parity	AFC (m)	N →	SP (days)	DP (days)	CI (days)
1	39.38±1.30 (23)	14	159.21±16.03	144.00±7.69	469.50±16.65
2	-	13	132.92±17.51	129.92±11.99	447.23±16.56
3	-	6	113.50±28.24	143.67±24.29	427.83±28.21
4	-	1	112.00	134.00	419.00
≥5	-	12	143.83±31.62	113.75±8.68	417.33±17.70
Overall	**39.38±1.30 (23)**	**46**	**140.78±11.24**	**131.87±5.72**	**443.07±9.28**

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (m)	Service Period (d)	Dry Period (d)	Calving Interval (d)
1992-93	33.61±1.72 (10)	119.67±33.72 (08)	129.86±10.63 (07)	403.63±21.77 (08)
1993-94	39.38±2.99 (07)	100.90±16.01 (10)	133.15±12.72 (13)	406.08±16.77 (12)
1994-95	38.27±1.70 (10)	77.33±05.56 (09)	129.10±09.72 (20)	377.00±08.00 (20)
1995-96	37.90±1.08 (14)	100.00±11.78 (06)	118.71±11.77 (07)	401.14±16.55 (07)
1996-97	42.08±3.38 (04)	125.14±11.23 (07)	146.00±38.31 (08)	424.00±23.55 (07)
1997-98	40.14±3.38 (06)	82.55±06.54 (11)	101.73±25.10 (11)	391.55±13.11 (11)
1998-99	43.42±2.28 (08)	152.50±25.80 (11)	12.58±08.87 (10)	437.83±15.33 (10)
1999-00	48.80±7.03 (06)	189.82±28.65 (16)	110.36±13.67 (11)	422.46±21.47 (11)
2000-01	42.37±2.81 (04)	164.94±22.66 (17)	126.66±10.74 (09)	410.78±13.05 (09)
2001-02	44.35±2.58 (11)	134.25±24.63 (12)	134.00±15.33 (12)	440.52±23.81 (12)
2002-03	41.20±2.90 (04)	404.60±96.25 (05)	310.77±54.92 (09)	585.50±69.01 (04)
2003-04	41.82±3.19 (08)	108.36±15.51 (19)	256.81±35.81 (29)	553.20±36.24 (29)
2004-05	42.55±1.75 (08)	149.71±15.59 (30)	212.75±29.94 (37)	480.71±28.12 (37)
2005-06	42.25±2.43 (10)	179.91±28.47 (54)	204.41±41.40 (38)	477.45±42.50 (37)
2006-07	41.87±2.26 (10)	139.01±15.40 (40)	171.09±21.44 (28)	452.42±21.30 (30)

2007-08	45.84±0.96 (28)	114.97±07.56 (62)	150.33±19.04 (43)	443.24±21.39 (43)
2008-09	39.73±1.79 (48)	152.44±11.71 (48)	167.02±10.70 (48)	451.51±10.57 (48)
2009-10	41.32±4.73 (15)	121.77±11.25 (59)	154.69±14.01 (63)	444.64±13.01 (63)
2010-11	39.59±1.16 (25)	175.27±16.26 (26)	183.24±21.07 (60)	449.08±15.74 (60)
2011-12	45.61±3.21 (20)	152.91±20.66 (29)	207.38±22.22 (39)	460.89±17.90 (39)
2012-13	39.69±2.79 (7)	213.49±26.37 (30)	232.93±21.36 (31)	479.29±22.88 (31)
2013-14	38.20±2.15 (18)	140.07±12.79 (39)	170.63±11.86 (39)	470.87±14.03 (39)
2014-15	37.64±1.33 (18)	123.84±10.72 (55)	162.27±16.31 (44)	439.48±15.97 (44)
2015-16	40.23±2.64 (9)	142.02±14.76 (51)	148.24±11.26 (49)	447.37±15.72 (49)
2016-17	38.99±1.15 (19)	145.85±9.53 (52)	171.45±13.54 (40)	457.65±15.02 (40)
2017-18	38.64±1.16 (14)	140.77±15.44 (35)	158.53±11.18 (40)	482.80±19.53 (35)
2018-19	38.62±1.05 (16)	169.22±15.96 (46)	181.47±13.70 (36)	495.83±18.93 (36)
2019-20	39.24±2.11 (20)	172.68±19.55 (47)	169.11±14.95 (47)	448.70±12.77 (47)
2020-21	39.03±0.84 (23)	137.24±11.09 (50)	154.76±11.14 (50)	434.22±11.67 (50)
2021-22	39.38±1.30 (23)	140.78±11.24 (46)	131.87±5.72 (46)	443.07±9.28 (46)

9.15 Milk Production and Disposal (2021-22)

Month	**Total milk produced (kg)**	**Disposal (Kg)**		
		Milk sold	**Calf feeding**	**Expt.**
April, 2021	12930.0	The whole milk was given to DT Section (LPT) for disposal		
May, 2021	10984.0			
June, 2021	9186.0			
July, 2021	8313.0			
August, 2021	9562.0			
September, 2021	11000.0			
October, 2021	12763.0			
November, 2021	14011.0			
December, 2021	17078.0			
January, 2022	17921.0			
February, 2022	15843.0			
March, 2022	15613.0			
Total	**155204.0**			

9.16 Feed and fodder (Quintals) availability (2021-22)

Quarter	**Type of fodder**	**Qty. produced at Farm**	**Qty.* Purchased**	**Actually fed (Qtls)***	**Balance**
I	Green /Semi Dry	-	-	5028.8	-
	Dry	-	-	286.2	-
	Silage	-	-	-	-
	Concentrate	-	-	458.7	-
II	Green /Semi Dry	-	-	5078.7	-
	Dry	-	-	227.9	-
	Silage	-	-	-	-
	Concentrate	-	-	532.4	-
III	Green /Semi Dry	-	-	5845.1	-
	Dry	-	-	272.1	-
	Silage	-	-	-	-
	Concentrate	-	-	620.0	-

IV	Green /Semi Dry	-	-	6574.8	-
	Dry	-	-	501.0	-
	Silage	-	-	-	-
	Concentrate	-	-	612.8	-
Total	**Green /Semi Dry**	**-**	**-**	**22527.4**	**-**
	Dry	**-**	**-**	**1287.2**	**-**
	Silage	**-**	**-**	**-**	**-**
	Concentrate	**-**	**-**	**2223.9**	**-**

*Concentrate mixture supplied/purchased by F.T. Unit of Institute

Table 9.17 Milk performance during (April 2021- March 2022)

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April, 2021	73.30	33.03	106.33	68.94	5.88	4.05
May, 2021	67.26	38.24	106.00	63.45	5.27	3.34
June, 2021	60.20	45.93	106.13	56.72	5.09	2.89
July, 2021	56.87	51.26	108.13	52.59	4.72	2.48
August, 2021	60.55	48.16	108.71	55.70	5.09	2.84
September, 2021	66.23	40.70	106.93	61.94	5.54	3.43
October, 2021	70.52	38.03	108.55	64.97	5.84	3.79
November, 2021	73.30	37.67	110.97	66.05	6.37	4.21
December, 2021	80.23	35.81	116.03	69.14	6.87	4.75
January, 2022	84.90	31.48	116.39	72.95	6.81	4.97
February, 2022	86.04	29.96	116.00	74.17	6.58	4.88
March, 2022	80.68	33.68	114.35	70.55	6.24	4.40
Overall	**71.67**	**38.66**	**110.38**	**64.76**	**5.86**	**3.84**

9.17.1 Milking performance since inception

Year	No. of Animal in Milk	No. of Animal Dry	Total Animal	% in Milk	Wet Ave. * (kg)	Herd Ave. * (kg)
1992-93	22.44	13.56	36	62.33	4.31	2.68
1993-94	38.15	25.85	64	59.60	4.62	2.75
1994-95	38.62	44.38	83	46.53	3.90	1.81
1995-96	29.17	41.83	71	41.08	3.63	1.49
1996-97	28.20	31.80	60	47.00	4.19	1.96
1997-98	26.67	23.33	50	53.34	4.84	2.58
1998-99	20.30	22.70	43	47.20	5.79	2.73
1999-00	22.64	11.36	31.70	71.41	4.77	4.17
2000-01	26.97	10.03	38.73	69.63	5.42	3.80
2001-02	32.61	19.17	51.78	59.80	5.82	3.64
2002-03	33.64	29.98	63.62	51.75	4.94	2.47
2003-04	36.82	54.79	91.61	39.67	5.94	2.46
2004-05	37.68	53.90	91.58	40.95	5.99	2.53
2005-06	45.64	53.22	98.87	46.16	6.14	3.07
2006-07	41.42	35.33	76.75	53.96	6.15	3.42
2007-08	62.03	33.16	93.23	66.53	5.98	4.05
2008-09	53.45	31.23	84.69	63.12	6.69	4.27
2009-10	45.28	41.66	86.94	52.08	6.68	3.34
2010-11	46.67	43.33	90.00	51.85	5.88	3.14
2011-12	40.68	31.56	72.27	57.44	5.82	3.39
2012-13	39.16	23.08	62.25	62.92	5.66	3.59

2013-14	44.94	22.84	67.78	65.97	5.85	3.91
2014-15	42.93	23.36	66.05	65.15	6.80	4.49
2015-16	43.61	21.88	65.47	66.49	6.48	4.33
2016-17	46.02	27.42	73.25	62.85	6.00	3.77
2017-18	50.51	27.73	78.34	64.52	5.77	3.72
2018-19	49.95	22.98	72.42	67.64	6.43	4.40
2019-20	62.99	34.96	98.15	63.96	5.95	3.81
2020-21	67.88	36.38	104.99	65.14	5.84	3.88
2021-22	71.67	38.66	110.38	64.76	5.86	3.84

* based on pail yields

9.18 Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
4905	563, 570*, 574, 584	-	-	-
7094	556, 566, 580, 587	-	-	-
2677	564, 568, 595	-	-	-
5147	565	-	-	-
7227	567, 572	-	-	-
2676	573, 581, 623	-	-	-
7147	575, 585	-	-	-
1150	582, 592	-	-	-
5181	594, 603	-	-	-
4146	605*	-	-	-
2674	606	-	-	-
2559	609	-	-	-
2759	612	-	-	-
5374	614, 625	-	-	-

9.19 Bull wise daughters completing 1st lactation

Sl. No.	Bull No.	Daughter number	Date of Birth	Date of Calving	AFC (days)	Lact. Length (d)	TLMY (kg)	SLMY (kg)	Remarks
1.	4403	261/16	30-10-2016	10-07-2020	1349	275	1811.4	1811.4	-
2.	605	271/17	13-01-2017	17-08-2020	1312	295	2596.5	2596.5	-
3.	605	278/17	28-01-2017	22-10-2020	1363	489	3247.3	2530.0	-
4.	605	283/17	15-02-2017	24-06-2020	1225	301	1920.0	1920.0	Died
5.	605	284/17	17-02-2017	01-07-2020	1230	284	1931.2	1931.2	-
6.	605	285/17	23-02-2017	09-08-2020	1263	310	2187.0	2177.7	-
7.	605	287/17	27-02-2017	16-08-2020	1266	269	1665.0	1665.0	Auction
8.	1027	290/17	08-05-2017	08-07-2020	1157	427	2615.1	2187.1	-
9.	3591	292/17	11-06-2017	18-06-2020	1103	307	1747.5	1740.1	Auction
10.	6379	294/17	26-06-2017	25-06-2021	1460	33	63.0	-	-
11.	1027	295/17	27-07-2017	16-09-2020	1146	329	1550.5	1545.0	-
12.	2383	296/17	04-08-2017	01-07-2020	1062	355	2350.8	2191.0	-
13.	2467	300/17	14-08-2017	03-01-2021	1338	383	2259.6	1980.8	-
14.	4889	302/17	19-08-2017	08-06-2020	1024	328	1706.1	1672.1	-
15.	2501	303/17	24-08-2017	14-09-2020	1117	248	1345.5	1345.5	-
16.	1027	305/17	30-11-2017	29-12-2020	1125	406	2417.0	2043.0	-
17.	6409	308/17	08-09-2017	21-09-2020	1109	330	2131.0	2020.2	-
18.	4705	313/17	22-09-2017	02-06-2020	984	371	2054.1	1910.0	-
19.	2383	316/17	21-10-2017	10-12-2020	1146	425	2606.5	2299.3	-
20.	4889	321/17	18-11-2017	22-09-2020	1039	339	1760.8	1682.9	-
21.	Sikandar	375/18	24-09-2018	13-07-2021	1023	13	23.4	-	-

9.20 Breeding bulls selected for current set (20th set – in waiting) : Nil

9.20.1 PT Bulls for nominated mating

Bull No.	Set No.	Centre	Dams' Best yield	Rank	Breeding Value	% Superiority
4354	15 Set	CIRB	3528	I	2589	1.67
6007	15 Set	NDRI	3260 (1)	II	2588	1.61
2459	15 Set	GADVASU	4636	III	2587	1.58

9.20.2 List of Future breeding bulls (as on 31.03.2022)

Sr. No.	Bull No.	Date of birth	Dam No.	Sire No.	Dams best SLMY (kg) / Parity	Semen doses available	Expected predicted Difference (EPD)
1.	235/2016	24/05/2016	1012	4363	3270.0/II	>3000	-
2.	297/2017	08/08/2017	869	4705	3406.7/V	>3000	-
3.	374/2018	18/09/2018	1012	4733	3270.0/II	-	-
4.	456/2019	02.11.2019	Calf	720	3267.5/II	-	-
5.	499/2020	24/08/2020	Calf	1088	3242.6/II	-	-
6.	532/2020	18/11/2020	Calf	1091	3034.5/II	-	-
7.	536/2020	03/12/2020	Calf	128/14	3075.6/I	-	-
8.	596/2021	27.10.2021	Calf	1012	3275.0/II	-	-

9.21 Target achieved during the year

Trait	Target	2018-19)	2019-20	2020-21	2021-22
Av. Age at first calving (months)	40	38.62 ±1.05 (16)	37.33 ± 1.56 (18)	39.03± 0.84 (23)	39.38± 1.30 (23)
Av. Service period (days)	130	169.22±15.96 (46)	128.40±10.93 (43)	137.24±11.09 (50)	140.78±11.24 (46)
Calf mortality (0-3 months)	≤ 3 %	4.10 %	6.58 %	0.00 %	2.63 %
Wet average (kg)	≥8.5 kg	6.43 kg	5.95 kg	5.84 kg	5.86 kg
Herd average (kg)	≥5.5 kg	4.40* kg	3.81 kg	3.88 kg	3.84 kg

** Based on pail yields*

10. Salient Research Achievements:

(a) Herd Strength: The opening balance (herd strength) of Murrah buffaloes as on 01/04/2021 was 280 (84 males and 196 females). Additions in the herd were due to birth of 29 female and 41 male calves (70 calves). Deletions from the herd were due to death of 8 females, external transfer of 25 males and auction/sale of 10 buffaloes (3 males and 7 females). In all, 43 animals were deleted from the herd due to various reasons, whereas 70 animals were added due to new births. The new calvings showed a peak of 13 calvings during August-September, 2021. There were no calvings during March, 2022. The male: female ratio of new calvings was 58.57 : 41.43. The closing balance of the buffalo herd as on 31/03/2022 was 307 buffaloes 210 females and 97 males, Table 9.1 and 9.2).

Out of total 10 animals culled/sold during the current year (7 females and 3 males, Table 9.1 and 9.3), all 7 buffaloes were sold/auctioned due to low production/reproductive and udder problems, however, 3 surplus males were also auctioned (Table 9.3).

(b) **Mortality (Detailed):** The overall mortality percent during the current year was 2.29%. The overall female and male group mortality percents were 3.56 and nil%, respectively (Table 9.4). A total of 8 female deaths were recorded in IVRI buffalo herd during the current year. The major causes of mortality are presented in Table 9.5.

(c) **Prophylaxis:** The prophylaxis measures taken in the Murrah Buffaloes have been presented in Table 9.6.

(d) **Reproductive Performance:** The overall conception rate was 45.12% (Table 9.7). The respective figures in heifer and adult groups were 43.90 and 45.40%, respectively. The overall calving abnormalities were 23 (1 still birth, 7 abortions, 2 dystokia, 12 ROP and 1 prolapse, Table 9.2). The quarter wise and bull wise conception rates are presented in Table 9.8 and 9.9. Bull wise semen stock position during the report period is presented in Table 9.10.

The means for age at first calving, service period, dry period and calving interval were 39.38±1.30 months, 140.78±11.24 days, 131.87±5.72 days and 443.07±9.28 days, respectively (Table 9.14 and 9.14.1).

Bull wise daughters born, bull wise daughters completing first lactation, breeding bulls selected for current set, PT bulls for nominated matings and list of future breeding bulls as on 31/03/2022 are presented in Table 9.18 to 9.20.2, respectively.

(e) **Growth performance:** The means for overall live body weights at birth, 3, 6, 12, 18, 24 months of age and at AFC were 35.72±0.63, 75.35±1.14, 121.68±1.78, 212.64±2.88, 278.44±4.42 and 350.89±5.95 kg, respectively. The respective values for females and males were 34.59±0.78, 72.63±1.51, 122.07±2.67, 216.52±3.72, 282.00±4.00 and 350.89±5.95 and 36.55±0.92, 77.58±1.59, 121.42±2.40, 210.03±4.10 and 271.33±10.62 kg (24 months – not available), respectively. The weight at first calving during the current year was 583.91±14.56 kg (Table 9.11.1).

(f) **Milk Production Performance:** Buffaloes produced 155204.0 kg milk during the period under report (Table 9.15). Means for overall wet and herd averages were 5.86 and 3.84 kg, respectively (Table 9.17 and 9.17.1). On an average, 64.76% of the total adult females were in the milk during this period (Table 9.17).

The means for total lactation milk yield, average lactation length, standard lactation milk yield and peak yield were 2420.25±58.80 kg, 339.53±7.99 days, 2272.70±44.35 kg and 11.01±0.34 kg, respectively (Table 9.12 and Table 9.12.1). The values for LTMY, productive life, productive days, unproductive days, MY/day of HFL, herd life and MY/day of productive life were 12761.10 kg, 2474.68 days, 1733.00 days, 741.77 days, 3.46 kg/d, 3666.91 days and 5.16 kg/day, respectively (Table 9.12.2).

The means for fat, SNF and total solids % were 7.14, 9.53 and 16.67%, respectively (based on 404 samples, Table 9.13).

The analysis for lactational traits was done for animals expressing total lactation milk yield ≥ 1800 kg and/or LL≥210.

(g) **Feeds and Fodder Availability:** The feeds and fodder supplied to the buffaloes of the project are presented in Table 9.16.

11. Publications/Presentations: **<u>List of Publications:</u>**

(i) Papers in research journals (national/international):

1. Wankhede, Pratik Ramesh, Pandey, Hari Om, Singh, Mukesh, **Tomar, A.K.S.**, Miranda, Cherryl Dimphna, Somagond, Arun, Biswal, Prachurya, Verma, Med Ram, Gaur, Gyanendra Kumar and Triveni Dutt (2021). Milking frequency affects consumptive water usage in the parlor. *The Pharma Innovation Journal*, 10 (**7**): 917-919.
2. Ravi, P. and **Tomar, A.K.S.** (2021). Disposal trend analysis in crossbred cattle and Murrah buffaloes under organized farm conditions. *The Pharma Innovation Journal*, 10(12): 1201-1203.
3. Jayswal, Kavipriya, Kala, Anju, Chaudhary, L.C., Kumar, Akhilesh and **Tomar, A.K.S.** (2021). Supplementation of autochthonous Pediococcus pentosaceus RM119 decreased diarrhoea, enhanced gut health and immunity in neonatal Murrah calves. *Current Research in Biotechnology* (Manuscript Number: CRBIOT-D-21-00398**)**
4. Vani, A, Kumar, Subodh, Kumar, Sanjeev, Chauhan, Anuj, Sahoo, Nihar Ranjan, Verma, Med Ram, **Tomar, A.K.S.** and Kumar, Pushpendra (2021). Exploration of allelic variants in short tandem repeats (STRs) flanking milk production QTLs and their association with milk production traits in Indian water buffaloes. *Tropical Animal Health and Production* (Submission ID: TROP-D-21-00170).

(ii) Technical/popular articles: -Nil-

(iii) Technical bulletins/Books/Book Chapters: 10

(iv) Scientific/Teaching reviews: -Nil-

(v) Presentations In Conferences/Symposia/Seminars/Other Fora: 03

(vi) Contributions made in compilation/documentation: 07

(vii) Any other (please specify):

(a) <u>Training Programme Organized</u>:

1. As Coordinator, organized 3 days Training programme (SCSP) on **लाभदायक भैंस पालन हेतु वैज्ञानिकीय प्रबंधन** w.e.f. 24-26th March, 2022 under aegis of NPBI, LPM Section and KVK, ICAR-IVRI Izatnagar (UP).
2. One Kisan Gosthi conducted on 28/03/2022 on **लाभदायक भैंस पालन** at village: Purnapur Block: Bithri Chainpur Tehsil and district: Bareilly under SCSP in Network Project on Buffalo Improvement for farmers/dairy farmers.

(b) <u>Thesis guided (as Chairman, SAC): 03</u>

12. Expected Socio-economic impact in the tract:

Surplus Murrah buffaloes along with breeding males have been sold in the public auction to the local dairy farmers. It will not only improve the milk and meat production in the field in the form of Murrah/graded Murrah progenies but will also uplift the socioeconomic status of the dairy farmers of northern India.

13. **Constraints (if any):** Paucity of project staff

14. **Focus of the work in the coming year:**

i. To increase the number of elite buffaloes in the herd.
ii. To carry out the envisaged technical programme for fulfillment of laid down objectives.
iii. To distribute superior germ-plasm to the buffalo farmers in field.
iv. To establish a high yielding nucleus herd of Murrah buffaloes at IVRI Izatnagar.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC		Balance
Total	ICAR Share		ICAR Share	State Share	
18.00*	15.00+3.00*	18.00*	16.73277	0.00	(+) 1.26723

* Rs. 3.00 Lakhs (Recurring contingency) included for SCSP

Herd Performance:

Herd strength at the centre was 307 animals including 156 breedable buffaloes (>2 year). During the report period 70 calving were reported and calf mortality (0-3 months) was 2.63 %. Conception rate was 45.12 % lower than the last year 50.52 %.

Body weights at 24 months was 350.89±7.15 (29) lower than the previous year 340.69±5.95 (28) in females. Average lactation milk yield increased from 2411 kg (57) to 2420 (59) kg and 305 days or less day milk yield increased from 2224 kg (57) to 2272 kg (59). Reproductive performance of the centre improved over the years. AFC at the centre was 39.38 months (23) under the target. Service period, Dry period and Calving Interval during the year were 140.78 days (46), 131.87 days (46) and 443.07 days (46) as compare to previous year 172.68 days (47), 169.11 days (47) and 448.70 days (47), respectively. Wet and herd averages are reported as 5.86 kg and 3.84 kg respectively. 64.76 percent animal are in milk as compare to previous year 65.14 percent.

Accomplishment and Targets Achieved:

Trait	**Target**	**(2018-19)**	**(2019-20)**	**(2020-21)**	**(2021-22)**
Av. Age at first calving (months)	40	38.62 ±1.05 (16)	37.33 ± 1.56 (18)	39.03± 0.84 (23)	39.38± 1.30 (23)
Av. Service period (days)	130	169±15.96 (46)	128±10.93 (43)	137±11.09 (50)	141±11.24 (46)
Calf mortality (0-3 months)	≤ 3 %	4.10 %	6.58 %	0.00 %	2.63 %
Wet average (kg)	≥8.5 kg	6.43 kg	5.95 kg	5.84 kg	5.86 kg
Herd average (kg)	≥5.5 kg	4.40* kg	3.81 kg	3.88 kg	3.84 kg

** Based on pail yields*

Recommendations:

- Needs emphasis to improve production traits and service period.

NETWORK PROJECT ON MURRAH BUFFALO IMPROVEMENT
LUVAS UNIT, HISAR

1. **Name of Centre**: Buffalo Research Centre
Department of Livestock Production Management
LUVAS, Hisar

2. Project Code 5508 C(b) LPM-3 ICAR

3. Project Title Network Project on Murrah Buffalo Improvement

4. **Date of start:** 1993

5.Objectives: To establish elite herd of 50 to 100 Murrah (at each center) for the production of genetically superior young bulls. To evaluate sires through institutional / associated herd/field progeny testing. To produce, test, propagate and conserve high genetic merit male germplasm

6. Technical Program: Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 500 and 300 breedable females (Murrah). Selection and testing of minimum 15 bulls of Murrah / 4-6 bulls for other breeds in every 18 / 24 months cycle. Production of minimum 10,000 (Murrah) and 3000 to 5000 (Other breeds) frozen semen doses from each test bull. Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated. Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set. Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers. Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4^{th} or more lactation). Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds. Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities. Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records.

8. Financial Statement: Head wise budget allocation and utilization; revenue receipts

SOE	Allotment	Expenditure	Balance
M&S(General)	6000000	5999966	34
M&S(SCSP)	300000	298677	1323
M&E(General)	400000	396916	3084
M&E(SCSP)	100000	96768	3232
TA/DA	-	-	-
POL	-	-	-
Works	-	-	-
Total	**6800000**	**6792327**	**7673**

6. Staff position: (Present and revised)

Discipline	Name of Scientist / Staff		Status PI/Co-PI/ Associated)
LPM	Dr. Subhasish Sahu Dr. Dipin Chander Yadav		PI Co-PI
AGB	Dr. S.S.Dhaka		Associated
VGO	Gynaecologist (As per requirement)		-
Health / Others	TVCC (as and when required)		-
No. of staff			
Administrative staff	--	Technical staff	--
Contractual staff (RA / SRF / YP-I, YP-II)			--

7. Herd performance

As stated below in table 9.1 to 9.21.

9.1 Herd Strength During the Period 4/2021 to 3/2022

Category		Addition			Disposal				
S. N.		**OB**	**B/P**	**T**	**D**	**T**	**S**	**E**	**CB**
Female									
1.	Calves 0 – 3 months	9	48		1	-47		-	9
2.	Calves >3 – 12 months	29		+47	1	-38	0		37
3.	Heifers 1 – 2 years	38		+38	2	-38	4		32
	> 2 years	75		+38	-	-33	10		70
4.	Buffaloes in Milk	87		+33	-	-33	10		77
5.	Buffaloes Dry P /NP	22		+33	4		18		33
	Sub Total	260	48		8		42		258
Male									
1.	Calves 0 – 3 months	5	53		5	-40		1	12
2.	Calves >3 – 12 months	41		+40	1	-39	6		35
3.	Male above								
	1 – 2 years	35		+39	-	-33	17		24
	> 2 years	29				-19	21		22
4.	Breeding bulls	0		+19	-		19		0
5.	Bullocks /Teaser/Other	2		+1	-				2
	Sub Total	112	53		6		63	1	95
	Grand Total	372	101		14		105	1	353

OB = Opening Balance D = Death S= Sale E= Experimental
T = Transfer CB = Closing Balance B= Birth

9.2 Calving Statistics During the Period 4/2021 to 3/2022

Month	Male		Female		Dystokia		Prolepses		Still Birth		Abortion		Overall	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
April, 21	4		7		-		-		-		-		11	
May	5		5		-		-		-		-		10	
June	5		2		-		-		-		-		7	
July	6		2		-		-		-		-		8	
August	10		8		-		-		-		-		18	
September	4		3		-		-		-		-		7	
October	1		4		-		-		-		-		5	
November	4		4		-		-		-		-		8	
December	2		4		-		-		1	0.99	2	1.98	6	
January,22	4		1		-		-		-		-		5	
February	2		4		-		-		-		-		6	
March	6		4		-		-		-		-		10	
Overall	53		48		-		-		1		2		101	

Sex ratio Male: Female (52.48:47.52), SB% = 0.99 %, Abortion % = 1.98%

9.3 Disposal of Animals During the Period 4/2021 to 3/2022

Female	**Primary cause of disposal**							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves								
0 to 3 months	-	-	-	-	-	1	-	1
3-12 months	-	-	-	-	-	1	-	1
Heifers								
1-2 years	4	-	-	-	-	2	-	6
> 2 years	3	-	7	-	-	-	-	10
Buffaloes								
Milch	5	-	-	2	3	-		10
Dry	9	-	8	1	-	4		22
Sub Total	21	-	15	3	3	8		50
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	-	-	-	-	-	5	1	6
3-12 months	6	-	-	-	-	1	-	7
1 to 2 year	17	-	-	-	-	-	-	17
. >2 year	21	-	-	-	-	-	-	21
Breeding bulls	19	-	-	-	-	-	-	19
Bullock+Teaser +Others	-	-	-	-	-	-	-	-
Sub Total	63	-	-	-	-	6	1	70
Grand Total	**84**	**-**	**15**	**3**	**3**	**14**	**1**	**120**

9.4 Month-wise Mortality During the Period 4/2021 to 3/2022

	Female						**Male**					**Overall Herd**
Month	**0-3 Month**	**3-12 Month**	**1-2 Yrs.**	**Above 2 Yrs.**	**Milk + Dry**	**Overall Female**	**0-3 Month**	**3-12 Month**	**1 -2 Yrs.**	**>2 yrs.**	**Overall Male**	
No.	57	29	38	75	109	308	58	41	35	31	165	473
Died	1	1	2	-	4	8	5	1	-	-	6	14
%												

% calf mortality= 5.22 % (6/115)

9.5 Causes of Mortality (quarter-wise) During the Period 4/2021 to 3/2022

Particulars	**1st quarter (April-June)**	**2nd quarter (July-Sept)**	**3rd quarter (Oct-Dec.)**	**4th quarter (Jan.-March)**	**Total**
Enteritis		3	2	-	5
Pneumonities	1	1	2	-	4
Septicamia / Toxaemia	-	-	-	-	-
Peritonitis	-	-	-	1	1
JD/TB	-	-	-	-	-
Milk Fever/metabolic diseases	-	-	-	-	-
TRP / TP	-	1	1	-	2
Parasitism	-	-	-	-	-
Accidental death	-	-	-	-	-
Peri-parturient disorders	-	-	-	-	-
Miscellaneous	-	-	2	-	2
Total	1	5	7	1	14

9.6 Prophylactic Measures Taken During the Period 4/2021 to 3/2022

Disease	Vaccination Date / No. of animals	No. of animals Tested / Positive		Dates and No. of animals treated for Parasitism
FMD	Whole herd (twice a year)	-	-	All calves upto the age of 1 year at regular interval
HS	Whole herd (twice a year)	-	-	
BQ	-	-	-	
Brucellosis	Calf-hood vaccination (Regular interval)	-	-	
JD	Screening done	-	-	
TB	Screening done	-	-	
IBR	-	-	-	
Mastitis	Milch herd (Once a year)	-	-	

9.7 Female conception rate during January 2021 to December 2021

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	61	27	44.26	18	9	50.0	6	2	33.33	5	2	40.0	90	40	44.44
Adults	108	52	48.14	48	19	39.58	24	12	50	21	8	38.09	201	91	45.27
Overall	169	79	46.74	66	28	42.42	30	14	46.66	26	10	38.46	291	131	**45.0**

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate (1.1.2021 to 31.12.21)

Quarter	No. of A I	Preg. animals	CR %
January – March Previous year	77	25	32.46
April - June	56	28	50.0
July - September	73	32	43.83
October- December	85	46	54.11
Overall	**291**	**131**	**45.0**

9.9 Bull-wise Conception Rate During the Period 4/2021 to 3/2022

S.No.	Bull No.	SET No.	Total No. of AIs.	Total Conceived	CR%
1	5181	19 SET	21	11	52.38
2	5232	19 SET	11	5	45.45
3	4196 (PT)	14 SET	22	11	50.0
4	6044 (PT)	14 SET	17	4	23.52
5	5246	19 SET	7	4	57.14
6	5374	19 SET	22	9	40.90
7	5333	19 SET	26	11	42.30
8	2357 (PT)	14 SET	21	8	38.09
9	1315	19 SET	23	14	60.86
10	5310	19 SET	17	5	29.41
11	2674	19 SET	24	11	45.83
12	2759	19 SET	23	10	43.47
13	2737	19 SET	17	8	47.05
14	7604	19 SET	22	12	54.54
15	5320	19 SET	11	6	54.54
16	5246	19 SET	7	2	28.57
Overall			**291**	**131**	**45.00**

No. of services per conception 2.22:1

9.10 Bull-wise Semen Stock During the Period 4/2021 to 3/2022

Bull No.	Set no.	Opening balance	Semen produced /Received	Consumption for AI/ Supplied	Balance
4196	14th set	35	15	27	23
2357	14th set	28	-	28	-
6044	14th set	12	15	27	-
5232	19th set	30	-	30	-
5181	19th set	30	-	30	-
5246	19th set	33	35	68	-
5320	19th set	-	85	65	20
5310	19th set	-	75	45	30
2850	20th set	-	5	2	48
7584	20th set	-	50	10	40
2848	20th set	-	50	4	46
2814	20th set	-	50	44	6
1315	19th set	-	125	125	-
5333	19th set	-	70	70	-
5374	19th set	-	35	35	-
7604	19th set	-	120	120	-
2737	19th set	-	35	35	-
2674	19th set	-	35	35	-
3004	20th set	-	50	50	-
7649	20th set	-	50	50	-
5427	20th set	-	50	50	-

9.11 Body Weights since Inception of Network Project

Year	Birth (n)	3 Months (n)	6 Months (n)	12 Months (n)	18 Months (n)	24 Months (n)	At AFC (n)
Female							
1994-95	34.0	62.8	97.1	150.7	203.2	262.5	470.03
1995-96	36.48	51.20	77.89	106.75	138.79	191.28	448.08
1996-97	35.26	53.7	90.5	118.65	146.59	206.49	423.18
1997-98	36.65	55.7	94.25	123.75	148.42	217.1	439.53
1998-99	36.87	55.94	94.4	112.31	149.94	217.1	439.53
1999-00	35.43	57.11	102.1	139.27	163.66	241.97	417.74
2000-01	39.49(71)	59.52(40)	104.76(37)	134.0(32)	164.69(31)	237.38(30)	494.59(27)
2001-02	37.6 (56)	5085(41)	84.69 (32)	167.9(27)	238.6 (35)	300.9(35)	470.1 (11)
2002-03	37.3 (87)	74.8 (88)	105.9 (77)	177.0(49)	259.6 (40)	-	457.4 (40)
2003-04	37.2 (87)	74.8 (88)	105.9 (77)	177.0(49)	259.6 (40)	345.1 (36)	457.4 (40)
2004-05	36.7 (85)	74.8 (85)	105.4 (75)	183.7(68)	260.6 (48)	341.0 (39)	459.2 (26)
2005-06	35.8 (81)	64.3 (53)	89.9(23)	140.1(25)	190.6 (20)	295.6 (16)	463.8 (12)
2006-07	36.8 (87)	71.2 (73)	103.2 (61)	141.5(41)	181.9 (29)	262.5 (38)	467.4 (21)
2007-08	36.6 (85)	66.2(78)	105.8(63)	201.6(50)	249.0 (36)	302.7 (34)	463.2 (24)
2008-09	36.3 (65)	66.4 (37)	94.5 (43)	146.7(26)	184.2 (87)	246.6 (57)	459.4(267)
2009-10	36.6 (71)	70.8 (70)	105.0(52)	154.4(43)	199.8 (49)	244.2 (38)	502.5 (24)
2010-11	35.8 (75)	72.3 (75)	108.0(52)	166.4(62)	209.3 (50)	287.9 (46)	522.9 (33)
2011-12	35.0 (71)	68.5 (63)	101.6(49)	175.6(40)	269.6 (46)	311.6 (34)	512.6 (23)
2012-13	36.4 (86)	68.2 (64)	105.1(51)	189.2(38)	278.4 (46)	302.8 (31)	528.7 (39)
2013-14	36.1 (83)	76.2 (41)	122.7(13)	185.5(43)	280.5 (30)	326 (19)	521.4 (32)
2014-15	37.2 (75)	63.8 (60)	84.9 (57)	174.5(25)	247.6 (26)	325.9 (25)	511 (17)
2015-16	35.7 (96)	54.4 (60)	92.3 (30)	189.7(30)	249.5 (30)	300 (30)	485.8 (27)

2016-17	36.2 (57)	65.6 (55)	98.7 (27)	174 (22)	250.6 (15)	302.0 (3)	447.5 (36)
2017-18	34.6±0.18 (48)	57.0±0.79 (44)	89.0±1.6 (38)	154.3±2.8 (44)	207.3±6.3 (26)	300.1±12.3 (4)	461.4±7.3 (27)
2018-19	34.4±0.4 (42)	52.7±0.5 (100)	84.2±1.2 (82)	149.6±3.0 (49)	223.5±4.4 (24)	291.0±10.9 (5)	462±5.4 (21)
2019-20	35.0±0.2 (46)	52.9±1.0 (41)	83.7±1.7 (33)	146.6±2.4 (36)	198.7±9.7 (15)	317.8±19.3 (12)	460.1±5.8 (24)
2020-21	35.0±0.4 (43)	50.9±0.9 (38)	90.4±1.3 (28)	143.9±3.1 (32)	198.6±8.5 (19)	258.3±2.6 (12)	411.6±7.1 (22)
2021-22	34.0 ±0.3 (48)	57.6±0.5 (68)	84.8±1.07 (61)	138.5±3.3 (41)	207.8±3.81 (44)	270.4±4.01 (25)	403.6±5.03 (33)
Male							
2016-17	36.4 (59)	60.7 (50)	90.3 (28)	170.9 (17)	282 (6)	-	-
2017-18	35.3±0.16 (29)	58.9±1.01 (32)	87.6±1.7 (44)	153.7±2.8 (46)	219.9±6.8 (14)	318.7±5.8 (3)	–
2018-19	35.1±0.3 (44)	56.7±0.6 (68)	87.1±1.3 (58)	156±2.7 (32)	218.2±3.8 (14)	285±0 (1)	-
2019-20	35.4±0.2 (45)	55.9±1.1 (34)	83.2±2.0 (30)	136.3±4.8 (7)	247.6±2.6 (8)	310.4±7.4 (5)	
2020-21	36.4±0.3 (45)	58.6±0.8 (33)	95.5±1.1 (29)	163.3±3.7 (12)	203.1±2.6 (11)	272.0±2.3 (10)	-
2021-22	35.0±0.19 (53)	58.8±0.59 (80)	89.5±1.1 (65)	159.2±2.46 (40)	236.3±5.35 (29)	286.7±5.59 (12)	-

9.12 Average Production Performance During the Period 4/2021 to 3/2022

Lact. No.	No. of obs.	Av. Lact. Yield (kg)	Av. Lact. Length (days)	305-day Milk Yield (kg)	Av. Peak yield
1st	32	2737.5	325.3	2585.8	12.0
2nd	21	3001.4	317	2905.4	13.9
3rd	16	3169.5	305	3088.0	15.3
4th	15	2734.3	282	2715	13.7
5th& above	17	3352	311	3332	13.9
Overall	**101**	**2902±56.12**	**311.9±4.36**	**2793.0±49.91**	**13.6±0.22**

Figures in parenthesis indicate number of observations

9.12 Average Production Performance since Inception of Network Project.

Year	Av. Lactation Yield in kg (N)	Av. Lactation Length in days (N)	Av. 305 or less day Milk Yield in kg (N)	Av. Peak yield (N)
1995-96	2033.0(70)	285.0(70)	1987.5(70)	10.8(70)
1996-97	1896.5(75)	269.4(75)	1880.8(75)	10.0(75)
1997-98	2150.3(83)	297.2(83)	2103.7(83)	10.9(83)
1998-99	1815.0(51)	302.6(51)	1964.7(51)	10.2(51)
1999-00	1798.1(64)	311.5(64)	1688.7(64)	10.0(64)
2000-01	2226.4(42)	305.0(42)	2183.1(42)	11.0(34)
2001-02	2205.4(50)	307.2(50)	2119.4(50)	11.0(50)
2002-03	2659.0(46)	329.7(46)	2522.3(46)	12.7(46)
2003-04	2115.5(75)	293.6(75)	2061.9(75)	11.5(75)
2004-05	2215.8(61)	311.13(61)	2134.4(61)	11.3(61)
2005-06	2346.9 (77)	307.8 (77)	2251.9 (77)	11.2 (89)
2006-07	2407.9 (75)	325.2 (75)	2261.4 (75)	11.4 (75)

2007-08	2199.2(80)	286.0(80)	2129.6(80)	11.2(80)
2008-09	2124.8(76)	295.1(76)	2040.6(76)	10.5(76)
2009-10	1885.5(84)	288.2(84)	1857.6(84)	9.97(84)
2010-11	2158.8(66)	309.7(66)	2041.8(66)	9.9(66)
2011-12	2544.4 (54)	332.4 (54)	2377.7(54)	11.1 (54)
2012-13	3010.3 (55)	319.3 (55)	2879.8 (55)	13.5 (55)
2013-14	2966.7 (65)	318.3(65)	2808.3(65)	13.3(65)
2014-15	2653.4 (62)	300.2 (62)	2584.4 (62)	12.9 (62)
2015-16	2664.9±63.71 (78)	304.5±6.5 (78)	2576.8±56.9 (78)	13.0±1.8 (78)
2016-17	3138.4±76.27 (60)	328.0±7.48(60)	2967.0±64.1 (60)	13.8±3.25 (60)
2017-18	3373.4±94.83(69)	354±8.52 (69)	3050±72.7 (69)	14.2±2.93 (69)
2018-19	3193.6±91.4 (66)	313.9±6.1 (66)	3067.3±84.1 (66)	15.1±0.3 (66)
2019-20	3107.0±54.2 (60)	301.4±3.0 (60)	3090.4±54.1 (60)	14.6±0.3 (60)
2020-21	3147.9±76.3(65)	322.0±5.4 (65)	2976.3±52.4(65)	13.5±0.3(65)
2021-22	2902±56.12 (101)	311.9±4.36 (101)	2793.0±49.91(101)	13.6±0.22 (101)

Figures in parenthesis indicate number of observations.

9.12.2 Herd Life Production (up to 4th Lactation) during 2021-22

Sr. No.	Traits	2019-20		2020-21		2020-21	
		No.	Average	No.	Average	No.	Average
1.	Herd Life (days)	16	3464	18	3326	26	3348
2.	Productive Days	16	1604	18	1523.5	26	1554.6
3.	Unproductive days	16	507	18	511.2	26	467.3
4.	Productive Life (days)	16	2110	18	2034.7	26	2021.9
5.	Life time milk Yield (kg)	16	16560	18	15715.2	26	15054.15
6.	Milk yield / day HLF (kg)	16	4.8	18	4.7	26	4.5
7.	Milk yield / day PLF (kg)	16	8.0	18	7.7	26	7.4
8.	Milk Yield / day productive days	16	10.4	18	10.3	26	9.7

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. Or date of disposal) Productive Days (date of first calving to total days in milk), Unproductive days (total days when buffalo not give milk from the date of first calving)

9.13. Average Milk Fat Component During the Period 4/2021 to 3/2022

Month	Animal in milk (N)	Av. Fat (%)	SNF	Protein	Lactose
April, 2021	86	6.66	-	-	-
May	83	6.70	-	-	-
June	80	6.92	-	-	-
July	79	7.35	-	-	-
August	80	7.08	-	-	-
September	83	6.97	-	-	-
October	85	6.91	-	-	-
November	85	7.0	-	-	-
December	79	7.09	-	-	-
January, 22	80	7.01	-	-	-
February	79	7.03	-	-	-
March	81	6.97	-	-	-
Overall	**81**	**6.97**	-	-	-

9.14 Reproduction Performance During the Period 4/2021 to 3/2022

Traits	Lactation No.					Overall
	1 Mean ± SE (N)	2 Mean ± SE (N)	3 Mean ± SE (N)	4 Mean ± SE (N)	5 & above Mean ± SE (N)	Mean ± SE (N)
Average Age at Calving (Months)	46.5±0.8 (33)	-	-	-	-	**46.5±0.8 (33)**
Average Service Period (Days)	-	132 (22)	158 (19)	68.9 (10)	89 (17)	**117.9±12.11 (68)**
Average Dry Period (Days)	-	131 (22)	125 (19)	87 (10)	100 (17)	**114.45±6.28 (68)**
Average Calving Interval (Days)	-	446 (22)	437 (19)	379 (10)	397 (17)	**419.9±8.91 (68)**

9.14.1 Reproduction Performance since Inception of Network Project.

Year	AFC (Days/ months)	Average Service Period (days)	Average Dry Period (days)	Average Calving Interval (days)
1993-94	1570.2	107.5	-	-
1994-95	1560.6	163.1	132.7	459.5
1995-96	1575.8(26)	135.0(54)	161.0(36)	456.0(40)
1996-97	1438.2(44)	107.0(63)	109.7(31)	408.5(76)
1997-98	1480.4(28)	107.7(55)	143.1(55)	389.2(55)
1998-99	1439.5(22)	108.7(47)	156.0(38)	417.2(46)
1999-00	1502.0(15)	148.3(49)	148.6(49)	459.0(49)
2000-01	1540.0(17)	146.0(25)	137.0(25)	479.6(25)
2001-02	1400.1(14)	147.0(31)	128.0(31)	457.0(31)
2002-03	47.01 months (27)	165.3(47)	156.4(47)	472.1(47)
2003-04	40.4(40)	87.6(42)	115.9(42)	396.4(42)
2004-05	40.0(26)	95.8(52)	128.0(52)	402.2(52)
2005-06	41.0 (31)	147.8 (128)	156.2(26)	454.8(128)
2006-07	41.8 (15)	165.2 (60)	162.6 (64)	472.5(60)
2007-08	44.4 (30)	164.9(57)	147.1(57)	467.2(57)
2008-09	48.4 (54)	139.1(54)	146.0(54)	444.0(54)
2009-10	45.7 (27)	156.86(68)	163.6(68)	459.3(68)
2010-11	45.8(33)	155.38(38)	160.3(38)	461.8(38)
2011-12	46.0 (23)	154.0 (47)	147.8 (47)	462.8 (47)
2012-13	46 (39)	112.1 (36)	100.8 (36)	411 (36)
2013-14	43.6 (33)	118.0(39)	119.8 (39)	423 (39)
2014-15	45.9 (17)	116.8 (52)	135.6 (52)	425 (52)
2015-16	41.7±1.28 (27)	127.5±10.2(58)	126.1±6.6 (58)	434.2±10.48(58)
2016-17	42.0±7.08 (34)	129±9.6 (43)	120±8.85 (43)	434.6±10.07 (43)
2017-18	42.2±0.87 (27)	135.43±12.51 (46)	113.29±5.98 (46)	444.59±12.41 (46)
2018-19	42.5±0.83 (21)	144.9±10.7 (60)	111.4±7.0 (60)	454.1±11.1 (60)
2019-20	43.5±0.49 (22)	122.6±7.5 (64)	111.7±6.0 (64)	430.5±7.9 (64)
2020-21	43.1±0.8 (27)	127.3±9.2(67)	128.5±7.5 (67)	437.3±9.2(67)
2021-22	**46.5±0.8 (33)**	**117.9±12.11 (68)**	**114.45±6.28 (68)**	**419.9±8.91 (68)**

Figures in parenthesis indicate number of observations

9.15 Milk Production and DisposalDuring the Period 4/2021 to 3/2022

Month	Total milk produced (kg)	Disposal		
		Liquid Milk	Calf feeding	Expt.
April, 21	23056	20354	2702	-
May	23058	20020	3038	-
June	23091	19911	3180	-
July	21833	20701	1132	-
August	22209	21171	1038	-
September	22522	21402	1120	-
October	22384	21896	488	-
November	21274	20684	590	-
December	22282	21798	484	-
January, 22	22106	21492	614	-
February	19666	19306	360	-
March	20884	20334	550	-
Total	**264365**	**249069**	**15296**	**-**

9.16 Feed & Fodder (Qtls.) During the Period 4/2021 to 3/2022

Month	Type of fodder/feed	Qty. produced at Farm (qtl.)	Qty. Purchased	Actually fed	Balance
Total	Green	21853.5	-	21853.5	-
	Silage	-	-	-	-
	Dry	4530.9	-	4530.9	-
	Concentrate	4111.83	-	4111.83	-

9.17 Milking Performance During the Period 4/2021 to 3/2022

Month	No. of Animal in Milk	No. of Animal dry	Total Animal	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April, 21	86	28	114	59.64	8.9	6.8
May	83	36	119	69.74	8.2	5.7
June	80	41	121	66.11	9.7	6.4
July	79	42	121	65.28	9.3	6.0
August	80	41	121	66.11	8.6	5.7
September	83	37	120	69.16	8.7	6.0
October	85	34	119	71.42	9.6	6.9
November	85	36	121	70.24	9.4	6.6
December	79	43	122	64.75	10.0	6.5
January, 22	80	26	106	75.47	9.8	7.4
February	79	26	105	75.23	9.7	7.4
March	80	30	110	72.72	9.1	6.8
Overall	**81.5**	**35**	**116**	**68.82**	**9.25**	**6.5**

9.17.1 Milking Performance since Inception of Network Project.

Month	No. of animals (in milk)	No. of animals (Dry)	Total animals	Animals in milk (%)	Wet Average (kg)	Herd Average (kg)
1993-94	42	43	85	49.0	6.3	3.8
1994-95	49	39	88	55.7	7.2	3.4
1995-96	53	39	92	57.1	7.3	4.0
1996-97	76	46	122	62.4	7.0	4.3
1997-98	68	36	104	65.4	6.5	3.7

1998-99	71	27	98	70.0	6.2	4.2
1999-00	60	23	83	72.5	5.2	3.8
2000-01	55	17	72	75.8	6.7	5.1
2001-02	48	22	70	68.6	7.5	5.2
2002-03	47	25	72	65.3	7.5	5.0
2003-04	68	29	97	70.0	7.3	5.1
2004-05	68	36	104	65.4	7.7	5.0
2005-06	63	32	95	66.5	7.7	5.2
2006-07	65	31	96	68.0	7.8	5.3
2207-08	66	34	100	66.0	7.6	5.1
2008-09	62	33	95	66.0	7.1	4.7
2009-10	69	41	110	62.7	6.8	4.3
2010-11	64	30	94	68.1	7.3	5.0
2011-12	58	24	82	71.55	8.5	6.1
2012-13	58	30	88	65.1	10.0	6.6
2013-14	61.0	35.0	96.5	64.1	9.4	6.0
2014-15	64	36	100	64.3	8.7	5.6
2015-16	72	42	114	63	9.9	6.2
2016-17	80	41	121	66.1	9.7	6.6
2017-18	81	28	109	74.3	10.3	7.6
2018-19	76	29	104	73.2	11.0	8.0
2019-20	78	26	104	75.1	10.4	7.7
2020-21	73	36	109	67	9.6	6.3
2021-22	**81.5**	**35**	**116**	**68.82**	**9.25**	**6.5**

9.18 Bull-wise Daughters Performance (1st lactation) During the Period 4/2021 to 3/2022

Bull No.	Set No	Total No. of daughters born	No. of daughters reaching A.F.C.	No. of daughters completing 1st Lactation
7263	18 Set	5	-	-
1208	18 Set	3	-	-
2269	18 Set	1	-	-
7227	18 Set	1	-	-
7094	18 Set	3	-	-
5232	19 Set	7	-	-
1219	18 Set	1	-	-
7147	18 Set	2	-	-
6044	14 Set	3	-	-
5181	19 Set	8	-	-
5246	19 Set	2	-	-
5374	19 Set	3	-	-
5246	19 Set	1	-	-
4196	14 Set	1	-	-
5333	19 Set	2	-	-
2674	19 Set	2	-	-
2759	19 Set	3	-	-
2383	16 Set	-	1	-
183	12 Set	-	1	-
2185	12 Set	-	2	-
3591	11 Set	-	3	2
2045	10 Set	-	2	2
1053	16 Set	-	4	2

M-29	16 Set	-	1	-
6646	16 Set	-	1	2
2429	15 Set	-	1	3
4592	16 Set	-	1	2
1693	10 Set	-	1	2
2133	11 Set	-	2	-
4403	15 Set	-	1	3
2501	16 Set	-	1	1
6409	16 Set	-	1	-
2467	16 Set	-	3	-
6753	16 Set	-	1	-
1027	16 Set	-	1	-
4705	16 Set	-	1	2
M-51	17 Set	-	1	-
4687	17 Set	-	1	-
4354	15 Set	-	-	1
2459	15 Set	-	-	3
4438	15 Set	-	-	1
UK	-	-	-	2
4363	15 Set	-	-	1
2417	15 Set	-	-	1
6379	16 Set	-	-	1
6290	15 Set	-	-	2
TOTAL		**48**	**31**	**33**

9.19 Bull-wise Daughters Completing 1st Lactation During the Period 4/2021 to 3/2022

Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
2429	1295	6.10.16	06.03.20	43	406	3386	2763
2459	1292	27.09.16	27.04.20	43	355	2773	2540
4438	1238	07.01.16	13.05.20	52	422	4178	3289
4705	1322	28.11.16	01.07.20	43.4	279	2132	2132
UK	1487	29.05.18	02.08.20	48	299	2472	2472
1693	1283	10.09.16	08.08.20	47	288	2489	2489
2429	1282	09.09.16	09.08.20	47	287	2082	2082
4363	1271	26.08.16	10.08.20	47.4	286	2591	2591
6646	1357	05.04.17	15.08.20	40.2	403	2885	2508
2417	1281	05.09.16	16.08.20	47.4	342	1647	1486
4403	1310	10.1116	28.08.20	45.6	304	2626	2626
4705	1328	03.12.16	29.08.20	44.8	361	3523	3152
UK	1489	09.09.20	30.08.20	42.0	234	1593	1593
4592	1333	18.12.16	07.09.20	44.5	441	3492	263
4354	1244	25.05.16	01.09.20	51.8	293	2703	2703
6379	1358	01.02.17	19.09.20	40.6	337	3750	3550
1053	1394	13.10.17	20.10.20	36.1	307	2269	2260
6290	1287	19.09.16	01.11.20	49.4	258	2150	2150
2045	1376	02.12.16	02.11.20	47.0	397	2655	2655
2045	1373	31.07.17	15.11.20	39.4	305	2410	2410
4403	1312	12.111.16	02.12.20	48.2	360	3328	3020
2459	1291	25.09.16	28.12.20	51.0	329	2915	2826
4403	1313	14.11.16	01.01.21	49.5	297	2331	2331
2459	1288	21.09.16	04.01.21	51.4	330	3312	3140

4592	1352	21.02.17	31.01.21	47.3	303	3122	3122
6290	1284	12.09.16	25.02.21	53.6	272	1514	1514
3591	1379	05.09.17	01.04.21	42.9	358	3633	3205
1053	1402	09.11.17	21.04.21	41.4	335	3045	2817
6646	1354	22.03.17	24.04.21	49	317	2921	2888
2429	1354	28.10.16	08.05.21	54.3	307	2773	2770
3591	1395	24.10.17	10.05.21	42.5	305	2421	2421
1693	1368	18.06.17	22.05.21	47.0	294	2480	2480
2501	1387	02.10.17	26.08.21	45.2	125	636	636

9.20 List of Breeding bulls Selected for current set (20th)

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best lact.305 or days less yield (kg)
1	1454	19.06.18	976	M51 (Set-17)	3355/17.4
2	19	29.10.18	777	M51 (Set-17)	3695/21.6

9.20.1 PT bulls used during the year form 15th set

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dams best SLMY (kg)
1	4354	05-09-2011	P4353	UK	3528
2	6007	15-09-2008	5231	5396 X	3260 (1)
3	2459	22-12-2011	2489	1796 PT-VII	4636

9.20.2 List of Future breeding bulls

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dams best SLMY (kg) / Parity	Semen doses available	Expected predicted Difference (EPD)
1	109	17.09.19	1068	53 M SET 17	3660/16.3	-	-
2	112	29.09.19	943	6942 SET 17	4390/17.2	-	-
3	138	07.03.20	787	183 PT SET 13	4767/19.4	-	-
4	139	16.03.20	7093	2185 PT SET 12	3363/16.0	-	-
5	142	06.05.20	1170	1150 SET 18	3278/15.7	-	-
6	145	29.05.20	953	183 PT SET 13	4296/19.7	-	-
7	151	02.07.20	911	183 PT SET 13	3997/16.8	-	-
8	158	18.07.20	1173	4995 SET 18	3651/17.5	-	-
9	196	13.10.20	1178	2677 SET 18	3256/14.9	-	-
10	216	01.12.20	1160	2676 SET 18	3866/14.3	-	-

9.21 Targets Achieved During the Year

Sr. No.	Trait	Target Fixed	2017-18	2018-19	2019-20	2020-21	2021-22
1	Av. Age at first Ist. Calving (months)	40.0	42.2±0.87 (27)	42.5±0.83 (21)	43.5±0.49 (22)	43.1±0.8 (27)	46.5±0.8 (33)
2	Av. Service Period. (days)	130	135±7.28 (46)	145±10.7 (60)	123±7.5 (64)	127±9.2 (67)	118±12.1 (68)
3	Calf Mortality (0-3 months)	≤ 3 %	3.16 %	5.50 %	4.72 %	1.85 %	5.22 %
4	Wet Average (kg)	≥ 8.5 kg	10.3 kg	11.0 Kg	10.4 kg	9.6 kg	9.25 kg
5	Herd Average (kg)	≥ 5.5 kg	7.6 kg	8.0 Kg	7.7 kg	6.3 kg	6.50 kg

10. Salient Research Achievements (example):

The LUVAS Murrah Centre has been making steady progress in meeting out the objectives of the Network Project which are reflected in the Annual Progress Report. Some of the salient findings are as:

i) Overall Wet average and Herd average were 9.25 kg and 6.50 kg, respectively.
ii) Overall 305d lactation milk yield and total lactation milk were reported 2793 kg and 2902 kg, respectively.
iii) Service period and calving interval during the period was observed 117.9 days and 419.9 days, respectively.
iv) During the period 1st April, 2021 to 31st March 2022, overall mortality rate was 2.9%.

11. Publications

12. Socioeconomic impact / Success stories:

- Propagated superior Murrah bulls to Village Gram Panchayats, Govt. organizations and progressive farmers.
- Imparted Skill development training on Dairy Farming to ninety beneficiaries under SCSP.
- Exposure visit of farmers by Director of Extension Education, LUVAS and other agencies at regular interval.

13. Constraints if any

Financial assistance may be provided to improve the existing facilities in the buffalo farm such as:

- Improving the Micro Climate of Milking Parlour.
- Performance recording through automatic milk analyzer and somatic cell counter.
- Modification of old working yard.
- Budgetary allocation for procurement of farm machinery like tractor, TMR, Chaff cutter etc.

14. Focus of work in the coming year: Improving the performance of herd and as per the guidelines of Network Project on Buffalo (Murrah) improvement**.**

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021 -22		Released ICAR Share as per R E	Intrest from bank	Detail as per PUC 2021-22	
Total	ICAR Share			Expenditure (ICAR Share)	Balance (ICAR Share)
52.00	48.00+4.00*	52.00*	0.40461	51.93107	(+) 0.47354

* Includes 4.00 lakhs for SCSP

Herd Performance

Herd strength at the centre was 353 heads with 180 breedable buffaloes (>2 year). 101 calves were added due to birth. During the period of report calf mortality (0-3 months) was 5.22 %. Conception rate was improved to 45.00 % in 2021-22 as compared to 41.76 % in 2020-21.

Average lactation yield decreased from 3148 kg (65) to 2902 (101) , 305 or less day average milk yield decreased from 2976.3 kg (65) to 2793 (101) and lactation length 312 days (101). The reproduction parameters viz. age at first calving, Dry Period, Service period and Calving Interval were during the period 46.5 months (33), 114.45 days (68), 118 days (68) and 419.9 days (68) as previous year 43.1 months (27), 128.5 days (67), 127.3 days (67) and 437.3 days (67) respectively. Wet and herd averages were 9.25 kg and 6.5 kg more or less similar as compare to 9.6 kg and 6.3 kg respectively of 2020-21. During the period 68.82 percent animals were in milk as 67.0 percent in 2020-21.

Accomplishment and Targets Achieved:

S. N.	Trait	Target	2017-18	2018-19	2019-20	2020-21	2020-21
1	Av. AFC (Months)	40.0	42.2±0.87 (27)	42.5±0.83 (21)	43.5±0.49 (22)	43.1±0.8 (27)	46.5±0.8 (33)
2	Av. service period (Days)	130 days	135±7.28 (46)	145±10.7 (60)	123±7.5 (64)	127±9.2 (67)	118±12.1 (68)
3	Calf mortality (0-3 months)	≤ 3 %	3.16 %	5.50 %	4.72 %	1.85 %	5.22 %
4	Wet average (Kg)	≥ 8.50 kg	10.3 kg	11.0 Kg	10.4 kg	9.6 kg	9.25 kg
5	Herd average (Kg)	≥ 5.50 kg	7.6 kg	8.0 Kg	7.7 kg	6.3 kg	6.50 kg

Recommendations:

- Production and reproduction performance of the herd need to be maintained.
- Emphasis should be given to reduce the AFC and calf mortality.

ICAR RESEARCH COMPLEX FOR EASTERN REGION, PATNA (BIHAR)

Report Period 2021-22

1. **Name of centre** : ICAR Research Complex Eastern Region Patna
2. **Project Code**
3. **Project Title** : Network Project on Murrah Buffaloes
4. **Date of Start** : July 2014 (Re-inducted)
5. **Objectives** :

Performance recording and improvement of Murrah buffaloes and evaluate sires through institutional / associated herd/field progeny testing, produce, test, propagate and conserve high genetic merit male germplasm

6. **Technical Programme :**

- Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 500 and 300 breedable females (Murrah) .
- Selection and testing of minimum 15 bulls of Murrah / 4-6 bulls for other breeds in every 18 / 24 months cycle.
- Production of minimum 10,000 (Murrah) and 3000 to 5000 (Other breeds) frozen semen doses from each test bull.
- Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated.
- Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
- Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
- Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation). New Table
- Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
- Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
- Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. **Staff associated with the project:**

Discipline	Name of Scientist / Staff	Status PI/Co-PI/ Associated)
AGB	Dr PC Chandran, Sr. Sci.	Principal Investigator
ANFT	Dr Amitava Dey, PS	Co- Principal Investigator
Veterinary Medicine	Dr Pankaj Kumar, Sr. Sci.	Co- Principal Investigator
ARGO	Dr Chandra Sekar Azad, Asst. Professor	Co- Principal Investigator
Vety. Surgery	Dr RK Tiwari, Asst. Prof.	Co- Principal Investigator
Veterinary Pathology	Dr Pradeep Kr. Ray, Sr. Sci.	Associated
Contractual staff (RA / SRF / YP-I, YP-II)	YP-II - One	

8. Financial Statement : Head wise budget allocation and utilization; revenue receipts

Fund utilization in Network Project for 2021-22 (Amount in Lakhs)											
Heads	**Capital**						**Salary**	**General**			
	Works	**Equip.**	**Library**	**Livestock**	**Furniture**	**Others**		**TA**	**HRD**	**Contingency**	**Others**
Fund released	0.00	1.50	0.00	0.00	0.00	1.00	0.00	0.00	0.00	18.00	19.50
Fund utilized	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	19.0	19.00

9.1 Herd Strength during the Period 1st April 2021 to 31st March, 2022

Sr. No.	Category	Addition			Disposal				CB
		OB	**B / P**	**T**	**D**	**T**	**S**	**E**	**CB**
	Female								
1.	Below 3 months	1	9	-	-	5	-	-	5
2.	3-12 months	10	-	5	-	10	-	-	5
3.	1-2 years	7	-	10	-	7	-	-	10
	Above 2 years	9	-	7	-	3	-	-	13
4.	Buffaloes in Milk	21	-	11	-	10	-	-	22
5.	Buffaloes Dry P /NP	29	-	10	-	8	5	-	26
	Sub Total	77	9	43	-	43	5	-	81
	Males								
1.	Below 3 months	2	12	-	1	8	-	-	5
2.	3-12 months	9	-	8	-	12	-	-	5
3.	1-2 years	1	-	12	-	1	4	-	8
	Above 2 years	4	-	1	-	-	3	-	2
4.	Breeding bulls	0	-	-	-	-	-	-	-
5.	Bullocks / Teasers	1	-	-	-	-	-	-	1
	Sub Total	17	12	21	1	21	7	-	21
	Grand Total	94	21	64	1	64	12	-	102

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April, 2021	2	-					1	2
May	1	1						2
June	-	1						1
July	-	-						-
August	1	-						1
September	-	-						-
October	1	-						1
November	-	2						2
December	1	1			1		1	2
January, 2022	2	1						3
February	2	3			1		2	5
March	2	-						2
Overall	12	9			2		4	22

Sex ratio Male : Female (1.3: 1)Abortion % = Nil

9.3. Disposal of Animals during the Period 1st April 21 to 31st March 22

Female	Primary cause of disposal							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves								
0 to 3 months	-	-	-	-	-	-	-	-
3-12 months	-	-	-	-	-	-	-	-
Heifers								
1-2 years	-	-	-	-	-	-	-	-
> 2 years	-	-	-	-	-	-	-	-
Buffaloes								
Milch	-	-	-	-	-	-	-	-
Dry	5	-	-	-	-	-	-	5
Sub Total	5	-	-	-	-	-	-	5
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	-	-	-	-	-	-	-	-
3-12 months	-	-	-	-	-	-	-	-
1 to 2 year	4	-	-	-	-	-	-	4
. >2 year	3	-	-	-	-	-	-	3
Breeding bulls	-	-	-	-	-	-	-	-
Bullock+Teaser +Others	-	-	-	-	-	-	-	-
Sub Total	7	-	-	-	-	-	-	7
Grand Total	12	-	-	-	-	-	-	12

9.4. Mortality during the Period 1st April 2021 to 31st March, 2022

Female							Male					Overall Herd
	0-3 Month	3-12 Month	1-2 Yrs.	Above 2 Yrs.	Milk + Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
No.	05	05	10	13	48	80	05	05	08	03	22	102
Died	0	0	0	0	0	0	01	00	00	00	01	01
%	0	0	0	0	0	0	20.0	0	0	0	4.6	0.98

Calf mortality (0 to 3 months) = 4.17 % (1/24)

9.5. Causes of Mortality (quarter wise) during the period April 2021 to March 2022

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	-	-	-	-	-
Pneumonitis	1				1
Septicaemia/ Toxaemia	-	-	-	-	-
Peritonitis	-	-	-	-	-
JD/TB	-	-	-	-	-
Milk Fever / metabolic disorders	-	-	-	-	-
TRP / TP	-	-	-	-	-
Parasitism	-	-	-	-	-
Accidental death	-	-	-	-	-
Peri-parturient disorders	-	-	-	-	-
Misc. (Snake bite)	-	-	-	-	-
Total	1	-	-	-	1

9.6 Prophylactic Measures undertaken

Disease	**Vaccination Date / No. of animals**	**No. of animals** Tested / Positive		**Dates and No. of animals treated for Parasitism**
FMD	17.07.2021	-	-	Calves are dewormed once in two months; And the adult animals are dewormed once in 6 months
HS	21.07.2021	-	-	
BQ	22.07.2021	-	-	
Brucellosis	-	-	-	
JD	-	-	-	
TB	-	-	-	
IBR	-	-	-	

9.7. Female Conception Rate during the Period January to December 2021

AI No.→	1st			2ND			3RD			4TH & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	04	01	25.0	04	02	50.0	0	0	0	0	0	0	08	03	55.5
Adults	11	06	54.5	18	10	55.6	15	06	40.0	6	3	50.0	50	25	53.2
Overall	15	07	46.7	22	12	54.5	15	06	40.0	6	3	50.0	58	28	48.3

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate

Quarter	No. of A I	Preg. animals	CR %
January – March Previous year	5	2	40.0
April – June	13	5	38.5
July – September	19	10	52.6
October- December	21	11	52.4
Overall	58	28	48.3

9.9. Bull-wise Conception Rate During the period January to December, 2021

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1	1315	XIX	5	3	60.0
2	2674	XIX	5	2	40.0
3	2737	XIX	6	3	50.0
4	2759	XIX	5	2	40.0
5	5181	XIX	4	2	50.0
	5232	XIX	5	2	40.0
	5246	XIX	4	2	50.0
	5310	XIX	5	3	60.0
	5320	XIX	6	3	50.0
	5333	XIX	5	2	40.0
	5374	XIX	5	2	40.0
	7604	XIX	3	2	66.7
Overall			58	28	48.3
No. of services per conception					**2.07**

9.10 Bull Wise Semen Stock

Sr.No	Set No	Bull No	O.B	Doses produced / received	Doses used /disseminated			Balance
					Supply	Sold	Exp.	
1.	XIX	1315	40		5		2	33
2.	XIX	2674	39		5		3	31
3	XIX	2737	40		6		1	33
4	XIX	2759	38		5		2	31

5	XIX	5181	40		4		3	33
6	XIX	5232	38		5		2	31
7	XIX	5246	40		4		1	35
8	XIX	5310	39		5		3	31
9	XIX	5320	40		6		3	31
10	XIX	5333	39		5		3	31
11	XIX	5374	39		5		2	32
12	XIX	7604	40		3		1	36
Grand Total			472		58		26	388

9.11.1 Average Body weight (kg) since inception…. (Indicate number of animals in parenthesis)

Body weight was not taken as the balance is under repairing.

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	3	1435.88±38.64	307.18±19.20	1412.75±35.88	8.19±3.63
2nd	4	2217.32±108.91	348.71±37.85	1984.15±98.32	9.53±0.89
3rd	7	2385.45±135.28	328.56±46.14	2148.44±112.46	10.82±0.74
4th	6	2410.14±168.51	341.48±26.24	2189.11±157.43	11.12±0.88
5th & above	5	2228.42±175.34	349.14±37.15	1987.57±151.33	11.36±1.31
Overall	25	2135.44±89.10	335.01±21.16	1944.40±78.37	10.21±0.43

9.12.1 Average production performance of Buffaloes Since Inception of Network

Year	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak yield (kg)
2014-15	421.21±8.56 (13)	2176.98±89.23 (13)	1827.22±46.22 (13)	9.72±0.32 (13)
2015-16	329.04±6.35 (18)	2018.9±60.35 (18)	1865.6±36.75 (18)	9.06±0.28 (18)
2016-17	351.80±10.65 (19)	1932.25±18.12 (19)	1736.04±21.48 (19)	9.27±0.28 (19)
2017-18	405.42±35.15 (12)	2404.76±203.77 (12)	1996.65±122.6 (12)	12.34±0.48 (12)
2018-19	370.27±23.5 (16)	2356.17±147.22 (16)	1984.85±135.23 (16)	13.08±0.38 (16)
2019-20	329.38±12.15 (20)	2127.44±18.50 (20)	2088.45±19.16 (20)	12.75±2.11 (20)
2020-21	336.31±18.19 (31)	2166.04±89.10 (31)	1824.42±63.04 (31)	9.93±0.43 (31)
2021-22	335.01±21.16 (25)	2135.44±89.10 (25)	1944.40±78.37 (25)	10.21±0.43 (25)

9.13 Average Milk Composition from April 2021 to March 2022 :

Month	N	Fat	SNF	Protein	Lactose	SCC
April	20	7.56	9.15			
May	20	7.31	8.83			
June	40	7.81	8.98			
July	40	7.55	9.11			
August	40	7.62	9.15			
September	40	7.15	9.24			
October	40	7.18	8.97			
November	40	7.43	8.9			
December	40	7.48	9.11			
January	40	7.56	9.14			
February	40	7.5	9.07			
March	40	7.63	9.12			
Overall	**440**	**7.48**	**9.06**			

9.14: Reproductive Performance

Lactation / Parity	AFC (Months)	N →	SP (Days)	Days Open	DP (Days)	CI (Days)
1	51.35±12.44	3	-	-	110.47±17.42	-
2		4	88.14±17.12	117.23±19.88	112.78±21.87	418.14±32.21
3		7	91.67±11.83	122.26±10.43	106.85±24.23	461.40±35.60
4		6	98.22±20.22	121.42±17.26	100.47±18.36	435.38±22.27
5th and above		5	101.46±14.77	131.37±15.79	122.14±21.52	441.87±31.58
Over all	51.35±12.44	25	94.86±15.64	123.31±12.44	110.55±16.15	445.59±24.18

9.14.1 Reproduction Performance Since inception of Network

Years	AFC (Months)	Service Period (days)	Days Open	Dry Period (days)	Calving Interval (days)
2014-15		146.3±8.98 (9)	-	124.9±5.91 (9)	569.4±14.54 (9)
2015-16		139.86±4.76 (12)	-	94.17±1.70 (12)	424.90±1.42 (12)
2016-17		183.1±6.25 (14)	-	122.2±3.13 (14)	481.2±6.56 (12)
2017-18		195.3±8.21 (12)	-	110.4±6.58 (12)	515.2±7.12
2018-19		157.22±9.28 (18)	-	92.25±10.47 (18)	463.12±22.17 (18)
2019-20		130.92±12.55 (20)	-	91.97±13.22 (20)	425.91±40.62 (20)
2020-21	48.34±5.26(3)	103.08±10.85 (31)	130.45±11.47(31)	99.90±12.62 (31)	467.82±23.74 (31)
2021-22	51.35±12.44(3)	94.86±15.64 (25)	123.31±12.44(25)	110.55±16.15(25)	445.59±24.18 (25)

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 2021	4136	3417	715	4
May	4212	3500	708	4
June	3955	3335	616	4
July	4025	3386	635	4
August	4265	3606	655	4
September	4416	3764	648	4
October	4255	3646	605	4
November	4088	3497	587	4
December	4156	3494	658	4
January 2022	4485	3793	688	4
February	4848	4132	712	4
March	4929	4205	720	4
Total	51770	43775	7947	48

9.16 Feed and fodder (Quintals) availability

Months	Green fodder produced at Farm	Green fodder Purchased	Total
April 2021	336.8	-	336.8
May	365.6	-	365.6
June	475.1	-	475.1
July	586.8	-	586.8
August	654.5	-	654.5
September	637.5	-	637.5
October	570.4	-	570.4
November	440.2	-	440.2
December	526.8	-	526.8
January 2022	542.3	-	542.3

February	508.8	-	508.8
March	495.6	-	495.6
Total Green	**6140.4**	**-**	**6140.4**
Silage	-	-	-
Dry	1200	500	1700
Concentrate	-	1377	1377

9.17: Milk performance during April 21 to March 22

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 21	22	25	47	46.81	6.27	2.93
May	23	24	47	48.94	6.10	2.99
June	24	23	47	51.06	5.49	2.80
July	23	23	46	50.00	5.83	2.92
August	24	23	47	51.06	5.92	3.02
September	24	23	47	51.06	6.13	3.13
October	25	22	47	53.19	5.67	3.02
November	26	21	47	55.32	5.24	2.90
December	28	19	47	59.57	4.95	2.95
January 22	30	18	48	62.50	4.98	3.11
February	33	17	50	66.00	4.90	3.23
March	35	15	50	70.00	4.69	3.29
overall	26.42	21.08	47.50	55.46	5.44	3.02

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of Animals dry	Total Animals	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2014-15	8.17	10.83	19	42.98	3.98	1.71
2015-16	13.5	11.0	61	51.83	7.45	3.91
2016-17	19.1	9.4	68.1	66.1	6.39	4.51
2017-18	16.92	8.42	77.8	68.37	4.30	2.93
2018-19	14.75	10.67	25.33	58.01	4.85	3.08
2019-20	27.42	16.5	43.92	52.12	5.12	3.25
2020-21	27.25	19.17	46.41	58.75	4.42	2.58
2021-22	26.42	21.08	47.50	55.46	5.44	3.02

9.18: Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
B-851	XIII	2	2	2
4324	XIV	3	2	2
4328	XIV	1	1	1
4354	XIV	2	2	1
4363	XIV	1	1	-
4438	XIV	3	2	2
2565	XV	2		
2594	XV	2	1	-
2607	XV	3		
4733	XV	3		
M51	XV	2		
4905	XVIII	4		
1150	XVIII	4		
1209	XVIII	3		

1219	XVIII	2		
4995	XVIII	2		
1315	XIX	1		
5320	XIX	1		
5310	XIX	1		
2759	XIX	1		

9.19 Bull wise daughters completing 1ST lactation

Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
B-851	40	20.03.2015	07.01.2020	55	368	2045	1745
4438	78	10.05.2016	07.07.2019	33	399	1527	1316
4328	81	09.07.2016	26.10.2020	51	340	1639	1350
B-851	42	15.05.2015	16.11.2020	65	278	1524	1524
4438	48	15.01.2016	16.11.2020	57	325	1730	1685
4324	75	16.03.2016	15.03.2019	33	251	1440	1440
4324	87	09.09.2016	16.12.2020	51	323	1668	1598
4354	86	26.08.2016	23.01.2021	52	291	1526	1526

9.20 Breeding bulls Selected for current set : Nil
9.20.1 PT Bulls for nominated mating : Nil
9.20.2 List of Future breeding bulls : Nil

9.21 Target achieved during the year 202-21

Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
Av. Age at first calving (months)	40	--	-	-	48.34±5.26 (3)	51.35±12.44 (3)
Av. Service period (days)	130	195 (12)	157±9.28 (18)	131±12.55 (20)	130±11.47 (31)	123±12.44 (25)
Calf mortality (0-3 months)	≤ 3 %	50.0%	45.45%	2.77%	0.0	4.16 %
Wet average (kg)	≥8.5 kg	4.30	4.85	5.12	4.42	5.44
Herd average (kg)	≥5.5 kg	2.93	3.08	3.25	2.58	3.02

11. Salient Research Achievements: Investigation was carried out to employ whole blood sample as an alternate to PBMC (peripheral blood mononuclear cells) for studying expression profiling of select ISGs – ISG 15(Interferon stimulated gene 15), MX 1 (Myxovirus resistance 1) and MX 2 (Myxovirus resistance 2) during peri- implantation period in artificially inseminated dairy buffaloes using sybr green chemistry based quantitative real time reverse transcription PCR. Our results showed, transcriptional abundance of ISG-15 and MX2 genes were up regulated during peri-implantation period in buffaloes, but MX1 gene was found to be downregulated post day 18 of artificial insemination. Fold change in expression level between day 12 and 15 post AI did not vary significantly for ISG 15 and MX2 gene. Since the transcriptional abundance of all genes in whole blood sample, exhibited same trend as reported by previous researchers, in their studies, with the use of PBMC, henceforth, we suggest that whole blood can be successfully used as PBMC surrogate for expression profiling of genes involved in maternal recognition of pregnancy (MRP).

In continuation of our previous findings, suggesting expression profiling of chemokine genes CCL 8 (C-C motif chemokine 8) and CXCL10 (C-X-C motif chemokine 10) as indicator of pregnancy establishment in dairy buffaloes, further study was done to examine the effect of parity on their expression profile. We found insignificant variation in transcriptional abundance

of both the genes among primiparous and multiparous animals (Fig 1 and 2). Therefore, it can be concluded that, expression profiling of CCL8 and CXCL10 can be used as signature for pregnancy establishment irrespective of the parity status of animal.

11. Publications

Chandran, P.C., Dey, A., Barari, S.K. and Reena Kamal. Scenario and strategies for sustainable buffalo production in Eastern region of India. Submitted to Buffalo Bulletin.

12. Socioeconomic impact / Success stories:

During the year 2021-22, a total of 100 scheduled caste farmers were imparted training on importance of buffaloes in social upliftment of weaker sections of India, scientific rearing of buffaloes, husbandry practices to be followed for maximizing yield from buffaloes and major diseases affecting the buffaloes.

Apart from direct training, the farmer beneficiaries were also offered concentrated cattle feed, milk cans and milk buckets in order to improvise their husbandry practices and also to support them during adverse conditions.

Constraints if any

- Shortage of space for accommodating the animals and also shortage of fodder plot area.
- Possibility of transfer of land from the institute to Patna airport may affect the existing fodder plots very badly.

Focus of work in the coming year

To improve the performance of institute herds in terms of production and reproduction performances.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC		Balance (ICAR Share)
Total	ICAR Share		ICAR Share	State Share	
21.50*	19.50+2.00*	21.50*	19.69783*	--	+ 1.80217

* Includes Rs. 2.00 lakhs for SCSP

Herd Performance

The herd strength of farm increased from 94 to 102 head in 2021-22, comprising 61 breedable buffaloes. 21 calves added due to birth during the year. The calf mortality (0-3 months) was 4.16 percent and Conception rate was 48.30 percent.

Av. Lactation milk yield, Av. Lactation length and 305 or less day lactation milk yield were 2135.44 kg (25), 335.01 days (25) and 1944.40 kg (25) during the year as compare to previous year 2166.04 kg (31), 336.31 days (31) and 1824.42 kg (31), respectively. The service period, dry period and calving interval were 123 days (25), 111 days (25) and 446 days (25) during the period and 130 days (31), 100 days (31) and 468 days (31), respectively in 2020-21. The wet average (5.44 kg) and herd average (3.02 kg) slightly improved as compared to previous year 2020-21 performance (4.42 and 2.58 kg, respectively).

A. Accomplishment and Targets Achieved:

Sr. No.	Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
1	Av. AFC (Months)	40.0	--	--	--	48.34±5.26 (3)	51.35±12.44 (3)
2	Av. service period (Days)	130	195 (12)	157±9.28 (18)	131±12.55 (20)	103±10.85 (31)	123±12.44 (25)
3	Calf mortality (0-3 months)	≤ 3 %	50.0%	45.45%	2.77%	0.00%	4.16 %
4	Wet average (Kg)	≥ 8.50 kg	4.30	4.85	5.20	4.42	5.44
5	Herd average (Kg)	≥ 5.50 kg	2.93	3.08	3.25	2.58	3.02

Recommendations:

- Need improvement in milk production traits of buffaloes.
- Breedable buffalo population required to increase as revised target of 100.

ICAR-CIRB SUB CAMPUS, NABHA

1. **Name of the center** : Central Institute for Research on Buffaloes, Sub campus, Nabha
2. **Project Code** : 18-3/97 ASR-II Dated 29/03/2001
3. **Project title** : Network project on improvement of Nili Ravi buffaloes
4. **Date of Start** : 11/10/ 2001
5. **Objectives:**The objective of the project is to envisage and undertake progeny testing for improvement of Nili Ravi breed of buffaloes. Priority and emphasis will be on performance recording and improvement of the breed and on semen quality testing laboratory.
6. **Technical Programme:**As approved for the Network programme.
7. Staff position at CIRB sub-campus Nabha as on 31/03/2022: Redeployment
8. Herd Performance: Presented in table 9.1 to 9.21

9.1 Herd Strength during the Period 1st April 2021 to 31st March, 2022

Sr. No.	Category	Addition				Disposal				CB
		OB	**B/P**	**P**	**T**	**D**	**T**	**S**	**Sold to Farmer**	**CB**
	Female									
1.	Below 3 months	06	77	-		06	58	-	-	19
2.	3-12 months	58	-	-	110	02	116	-	-	50
3.	1-2 years	60	-	-	64	-	60	-	-	64
	Above 2 years	103	-	-	186	01	188	04	-	96
4.	Buffaloes in Milk	124	-	-	150	-	136	19	-	119
5.	Buffaloes Dry P /NP	19	-	-	136	02	88	29	-	36
	Sub Total	**370**	**77**	**-**	**646**	**11**	**646**	**52**	**-**	**384**
	Males									
1.	Below 3 months	13	70			03	62	01	-	17
2.	3-12 months	46	-		116	-	108	10	-	44
3.	1-2 years	19	-		54	-	16	40	03	14
	Above 2 years	30			25		14	15	04	22
4.	Breeding bulls	05	-		05	-	-	05	01	04
5.	Bullocks/Teasers / others	01	-		-	-	-	-	-	01
	Sub Total	**114**	**70**		**200**	**03**	**200**	**71**	**08**	**102**
	Grand Total	**484**	**147**		**846**	**14**	**846**	**123**	**08**	**486**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 21	02	03	-	01	-	-	-	05
May	03	01	01	01	-	-	-	04
June	04	01	-	01	-	-	-	05
July	03	06	-	04	-	-	-	09
August	12	10	-	02	-	-	-	22
September	04	10	-	03	-	-	-	14
October	10	10	01	-	-	-	-	20
November	04	04	-	03	-	-	-	08
December	09	13	-	02	-	-	-	22
January 2022	10	10	01	02	-	-	-	20
February	07	04	-	01	-	-	-	11
March	02	05	-	-	-	-	-	07
Overall	**70**	**77**	**03**	**20**	**-**	**-**	**-**	**147**

Sex ratio Male : Female (1 : 1.21) SB% = 2.00

9.3. Disposal of Animals during the Period 1st April 21 to 31st March 22

Female	Primary cause of disposal							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Exp. purposes	Total
Calves								
0 to 3 months	-					06		06
3-12 months	-					02		02
Heifers								
1-2 years	-					-		
> 2 years	-		03	01		01		05
Buffaloes Milch/ Dry	01	11	15	05	16	02		50
Sub Total	**01**	**11**	**18**	**06**	**16**	**11**		**63**
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	01					03		04
3-12 months	10							10
1 to 2 year	43					-		43
. >2 year	19					-		19
Breeding bulls	06					-		06
Bullock+Teaser+Others	-					-		-
Sub Total	**79**					**03**		**82**
Grand Total	**80**	**11**	**18**	**06**	**16**	**14**		**145**

9.4. Mortality during the Period 1st April 21 to 31st March, 2022

	Female						Male					Overall Herd
	0-3 Month	3-12 Month	1-2 Yrs.	Above 2 Yrs.	Milk + Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
No.	83	168	124	289	155	447	83	162	73	61	10	631
Died	06	02	-	02	02	11	03	-	-	-	03	14
%	7.23	1.19	-	0.35	1.29	2.46	3.61	-	-	-	1.63	2.22

Note: calf mortality 5.42% (9/166)

9.5. Causes of Mortality (quarter wise) during the period April 2021 to March 22

Particulars	*1st quarter*	*2nd quarter*	*3rd quarter*	*4th quarter*
A. Respiratory System				
1. Broncho-pneumonia		01	-	-
2. Acute Resp. failure		02	01	-
3. Pheumo-Enteritis				
B. Digestive system				
1. Enteritis			03	02
2. Gastritis		-		
3. Impaction	01	-	-	-
4. Peritonitis		01		
C. Cardio-vascular System				
D. Urogenital System				
1. Pyelonephritis				
E. Others				
1. Premature birth		01	01	

2. Joint-ill/ Naval ill		01		
3. Accident		-		-
4. Miscellaneous & Others		-	-	-
Total	**01**	**06**	**05**	**02**

9.6 Prophylactic Measures undertaken 2021-2022

Vaccination	*No. of animals*		*Screening*	*No of animals*		*No of animals treated for Parasitism*
	Available	*Inoculated*		*Tested*	*Results*	
FMD	645	645	TB *	190	-ve	290
HS	645	645	JD*	190	-ve	
BQ	-	-	Brucellosis**	145	-ve	
RP	-	-	Mastitis***	220	+ve (45)	
Brucellosis	95	95	TB *	-	-ve	

* Based on Intradermal Tuberculin PPD/Johnin PPD

** Based on RBPT/SAT ***Based on CMT

9.7. Female Conception Rate During the Period January to December 2021

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR%	AIs	C	CR%	AIs	C	CR%	AIs	C	CR %	AIs	C	CR%
Heifers	74	34	45.9	36	21	58.3	18	12	66.7	13	06	46.2	141	73	51.8
Adults	133	70	52.6	61	33	54.1	27	10	37.0	29	12	41.4	250	125	50.0
Overall	207	104	50.2	97	54	55.7	45	22	48.9	42	18	42.9	391	198	50.64

9.8 Month wise conception rate during the period January to December 2021

Month.	Total AI	Total Conceived	CR%
Jan, 21	32	18	56.25
Feb	50	23	46.00
Mar	39	26	66.67
Apr	39	16	41.03
May	29	9	31.03
June	19	8	42.11
July	3	1	33.33
Aug	2	1	50.00
Sep	18	7	38.89
Oct	52	35	67.31
Nov	59	32	54.24
Dec, 21	49	22	44.90
TOTAL	391	198	50.64

9.8.1: Quarter-wise conception rate

Quarter	No. of AI	Pregnant animals	CR %
January – March (Previous year)	121	67	55.37
April - June	87	33	37.93
July - September	83	09	39.13
October- December	160	89	55.63
Overall	391	198	50.64

9.9. Bull-wise Conception Rate During the period January to December, 21

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1	535	2nd	2	1	50.0
2	551	9th	60	28	46.67
3	556	9th	53	25	47.17
4	561	9th	17	5	29.41
5	565	9th	4	1	25.00
6	579	9th	82	40	48.78
7	674	9th	63	34	53.97
8	705	9th	76	45	59.21
9	710	9th	23	12	52.17
10	27	5th	11	7	63.64
			391	**198**	**50.64**

9.7 Bull Wise Semen Stock

Sr. No	Bull No.	Set No.	O.B.	Doses produced / received	Doses used /disseminated		Balance
					Consumption for AI/Testing	Sold.	
1	411	1st	545				545
2	464		602				602
3	473		642				642
4	479		619				619
5	523	2nd	769				769
6	524		1358				1358
7	525		543			40	503
8	535		823				823
9	562		894				894
10	577		1146				1146
11	596	3rd	800				800
12	674		1219			15	1204
13	702		923		30		893
14	716		1150				1150
15	719		996				996
16	771		566				566
17	791		1066				1066
18	802		946				946
19	806	4th	1500			50	1450
20	878		2000				2000
21	881		954			241	713
22	891		1092			165	927
23	900		1296			360	936
24	902		1456			415	1041
25	905		1447		50	100	1297
26	916		1483		20		1463
27	930		1496			50	1446
28	941		1230				1230
29	991	5th	2104				2104
30	3		520				520
31	25		2035			20	2015
32	27		3151		148	250	2753

33	63		3500				3500
34	113		1855			64	1791
35	168	6th	538				538
36	181		919				919
37	214		124			124	0
38	245		2827				2827
39	252		538				538
40	254		2096				2096
41	298	7th	1974			30	1944
42	308		667				667
43	312		680				680
44	336		212				212
45	342		2800				2800
46	352		2249			113	2136
47	359		2359				2359
48	435	8th	1178	158			1336
49	480		1531			10	1521
50	487		9949			26	9923
51	501		1920	581			2501
52	507		3799			60	3739
53	511		1192				1192
54	516		2805	372		20	3157
55	543		4415	882	30	30	5237
56	551	9th	2168	3356	189	110	5725
57	556		2634	3012	137	110	5399
58	561		222		82		140
59	565		133		7		126
60	579		699	1046	216		1529
61	674		792	3969	164	110	4487
62	705		411	2702	240	212	2661
63	710			219	111		108
			94557	**16797**	**1424**	**2725**	**107205**

9.11.1 Average Body weight (kg) since inception: Information not available

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	Av. Lactation Yield(kg)	Av. Lactation length (days)	305-days yield (kg)	Av. Peak Yield (kg)
1st	46	2334±103.96	302±8.78	2234±80.94	12.0±0.35
2nd	27	2901±179.48	301±11.32	2787±144.75	15.21±0.67
3rd	26	2683±130.53	287±7.57	2667±±126.47	14.70±0.68
4th	07	2646±190.79	268±7.09	2646±190.7+9	15.0±1.05
5th & above	24	2718±138.82	289±10.19	2655±117.51	15.83±0.71
Overall	130	2609.41±66.62	294±4.62	2535.42±57.06	14.0±0.30

9.12.1 Average production performance of Buffaloes Since Inception of Network

Year	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak yield (kg)
1991-92	373 (68)	2017 (68)	1813 (68)	
1992-93	309 (105)	1974 (105)	1921 (105)	
1993-94	328 (70)	1776 (70)	1744 (70)	
1994-95	350 (77)	2043 (77)	1944 (77)	
1995-96	354 (70)	2049 (70)	1894 (70)	

1996-97	392 (81)	2092 (81)	1807 (81)	
1997-98	354 (67)	2126 (67)	2056 (67)	
1998-99	341 (97)	2153 (97)	2056 (97)	
1999-00	337 (99)	1968 (99)	1874 (99)	
2000-01	305 (89)	1890 (89)	1812 (89)	
2001-02	296 (86)	1926 (86)	1885 (86)	10.00.(86)
2002-03	293 (105)	2007 (105)	1941 (105)	10.49(105)
2003-04	307 (93)	1968 (93)	1895 (93)	10.49(93)
2004-05	315 (116)	1974 (116)	1848 (116)	8.00(116)
2005-06	306 (102)	2190 (102)	2090 (102)	10.0(102)
2006-07	304 (118)	1921 (118)	1795 (118)	9.0(118)
2007-08	302 (122)	1787 (122)	1629 (122)	9.10(122)
2008-09	289 (108)	2036 (108)	1929 (108)	9.94(108)
2009-10	302 (146)	1927 (146)	1822 (146)	9.40(146)
2010-11	292 (115)	2042 (115)	1972 (115)	10.54(115)
2011-12	279 (88)	2045 (88)	1998 (88)	10.60(88)
2012-13	264 (123)	2048 (123)	2017 (123)	11.14(123)
2013-14	285(109)	2297(109)	2241(109)	12.20(109)
2014-15	303(115)	2464(115)	2384(115)	12.38(115)
2015-16	305(110)	2564(110)	2471(110)	12.4(110)
2016-17	298(136)	2452(136)	2377(136)	12.3(136)
2017-18	282± 4.80 (110)	2363± 60.83 (110)	2321± 55.25 (110)	12.7± 0.28 (110)
2018-19	311± 5.18 (111)	2797± 63.94 (111)	2679± 52.63 (111)	13.7± 0.29 (111)
2019-20	304±4.68 (105)	2688±63.44 (105)	2597±54.68 (105)	13.38±0.26 (105)
2020-21	300±4.39 (114)	2647±61.43 (114)	2594±58.69 (114)	13.78±0.27 (114)
2021-22	294±4.62 (130)	2609.41±66.62(130)	2535.42±57.06 (130)	14.0±0.30 (130)

9.12.2 Herd Life Production (up to 4th Lactation) during 2021-22

No. of Buffaloes	HLF (days)	PLF (days)	MY/HLF	MY/PL	PD (days)	UPD (Days)
31	31564	2357	4.36	6.73	1661	692

HLF (Herd Life) = Date of birth to date of completion of 4th or more lactation or date of disposal
Production life = Date of first calving to date of completion of 4th or more lactation
Productive days = Total days in milk completion of 4th or more lactation;
Unproductive days = Production life – Productive days; **MY/HLF** = Milk yield per days of herd life
MY/PL = Milk yield days of production life

9.13 Average Milk Composition from April 2021 to March 2022

Month	N	% Fat	Solid not fat	Protein	Lactose	Total Solides
April 21	121	7.0	10.1	4.9	-	17.10
May	109	7.0	10.1	5.0	-	17.10
June	91	7.14	10.11	5.0	-	17.25
July	89	7.21	10.15	5.03	-	17.36
August	83	7.05	10.08	5.02	-	17.13
September	76	7.00	10.06	50.2	-	17.06
October	89	6.95	9.93	4.86	-	16.88
November	98	7.26	9.54	4.01	-	16.80
December	-	-	-	-	-	--
January 2022	125	6.84	10.85	4.00	-	17.69
February	119	7.07	10.45	4.00	-	17.52
March	119	7.14	9.93	3.71	-	17.07
Overall	**102**	**7.1**	**10.12**	**4.60**	**-**	**17.22**

9.14: Reproductive Performance 2021-22

Lactation / Parity	AFC (Months) (N)	N →	Service period (Days)	Dry period (Days)	Calving interval (Days)
1	43.62±0.42 (51)				
2		23	170±17.27	160±10.71	476±17.40
3		21	116±11.79	130±17.55	417±11.69
4		20	90±8.72	113±9.66	394±8.83
5th and above		21	79±8.16	113±9.65	383±7.94
Over all		85	116±7.26	130±6.42	419±7.30

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (days)	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
1988-89	1273±44 (27)	41.88	205±14.0 (69)	211 (76)	518±16.0 (72)
1989-90	1301±35 (16)	42.80	186±29.0 (58)	177 (58)	511±36.0 (58)
1990-91	1297±40 (20)	42.66	276±22.0 (56)	197 (56)	517±25.0 (56)
1991-92	1411±24 (39)	37.53	312±24.0 (58)	243 (58)	622±25.0 (58)
1992-93	1438±37 (28)	47.30	207±17.0 (68)	180 (67)	490±16.0 (67)
1993-94	1356±39 (28)	44.60	211±22.0(58)	176 (58)	513±22.0 (58)
1994-95	1476±31 (29)	48.55	232±21.0 (63)	207 (63)	527±19.0 (63)
1995-96	1529±48 (24)	50.29	243±20.0 (52)	199 (52)	539±19.0 (52)
1996-97	1371±30 (31)	45.10	260±14.0 (69)	176 (89)	561±15.0 (69)
1997-98	1262±23 (32)	41.51	246±51.0 (60)	183 (60)	550±53.0 (59)
1998-99	1230±35 (26)	40.46	170±29.0 (89)	150 (89)	481±30.0 (89)
1999-00	1197±16 (22)	39.38	134±09.0 (91)	134 (91)	467±10.0 (91)
2000-01	1213±14 (45)	39.90	143±10.0 (80)	131 (80)	443±11.0 (80)
2001-02	1266±18 (31)	41.64	137±09.0 (83)	133 (83)	445±09.0 (83)
2002-03	1277±19 (58)	42.00	132±08.0 (90)	132 (90)	440±08.0 (90)
2003-04	1266±17 (59)	41.64	138±09.0 (78)	136 (78)	443±09.0 (78)
2004-05	1306±28 (39)	42.96	155±10.1(89)	146 (89)	463±10.2 (89)
2005-06	1294±27 (58)	42.57	167±10.9 (72)	157 (72)	474±10.6 (72)
2006-07	1214±29 (57)	39.93	165±14.7 (58)	160 (58)	478±14.3 (58)
2007-08	1241±22 (43)	40.82	165±11.2 (74)	150 (74)	458±11.1(74)
2008-09	1206±18 (69)	39.67	172±11.8 (70)	172 (70)	489±16.3 (70)
2009-10	1249±24 (52)	41.09	170±14.0 (76)	163 (76)	478±14.1 (76)
2010-11	1250±19 (47)	41.12	191±13.7 (71)	170 (71)	500±13.7 (71)
2011-12	1207±18 (43)	39.70	136±20.2 (48)	150 (48)	464±23.0 (48)
2012-13	1205±18 (52)	39.64	126±10.8 (75)	151 (75)	436±10.9 (75)
2013-14	1210±25(42)	39.80	127±10.6(67)	159(67)	447±8.53(97)
2014-15	1213±20(36)	39.90	112±7.89(88)	138(88)	420±8.09(88)
2015-16	1217±19(56)	40.03	145.3±9.20(88)	150(88)	453.3±9.20(88)
2016-17	1260±19(28)	41.45	140.4±7.00(118)	147(118)	448±7.07(118)
2017-18	1248±17 (49)	41.05±0.56	135±8.46 (95)	157± 5.56 (95)	444±8.44 (95)
2018-19	1235±19 (55)	40.61±0.63	129±8.55 ((77)	148± 5.93 (77)	438±8.54 (77)
2019-20	1270±13.93(42)	41.78±0.78	157±7.27 (94)	157±15.27(94)	466±7.29 (94)
2020-21	1357±16.34 (39)	44.66±0.54	136±7.1 (106)	144±5.85 (106)	444±7.25 (106)
2021-22	1325±13.00 (51)	43.62±0.42	116±7.26 (85)	130±6.42 (85)	419±7.30 (85)

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 21	29420.3	25217.5	3342.40	3.5
May	24734.8	20372.0	3638.87	3.5
June	20457.9	17745.0	2114.03	3.0
July	19236.3	16532.0	2141.02	3.0
August	20093.7	17089.0	2416.94	2.5
September	22481.6	18269.0	3555.79	2.0
October	25659.0	20848.0	4061.15	2.5
November	28209.60	22864.50	4520.96	2.5
December	30516.2	25039.5	4584.88	3.0
January 22	35326.9	27756.0	6537.96	4.0
February	33520.3	26832.5	5707.98	3.5
March	34370.8	27793.5	5573.71	2.5
Total	**324027.40**	**266358.5**	**48195.71**	**35.5**

9.16 Feed and fodder (Quintals) availability

Month	Feed & Fodder produced at farm (qtls)				Green Fodder purchased (qtls)	Silage (qtls)
	Green Fodder	Sold	Grazing Wt. (approx.)	Total		
April-21	3249	0	-	3249	-	-
May	2927	384	-	3311	-	-
June	3616	377	-	3993	-	-
July	4882	437	-	5319	-	-
August	3648	0	-	3648	-	-
September	3955	0	-	3955	-	-
October	3377	910	-	4287	-	-
November	3247	-	-	3247	-	-
December	5130	655	-	5785	-	-
January-22	5628	595	-	6223	-	-
February	5236	139	-	5375	-	-
March	4943	576	-	5729	-	-
Total Green	**48737**	**4073**	**-**	**54121**	**-**	**-**
Dry				**2559**		
Concentrate				**564601**		

9.16 Feed and Fodder purchased and offered to animals during the year 2020-21

Quarter	Type of Fodder	OB	Produced at CIRB	Qty. Purchased	Actually Fed.	Balance
I	Green	-	10553	-	10553	-
	Dry	-	2559	-	907	1652
	Silage	-	-	-	-	-
	Concentrate	-	1350.19	-	1350.19	-
II	Green	-	12922	-	12922	-
	Dry	1652	-	-	499	1153
	Silage	-	-	-	-	-
	Concentrate	-	1336.58	-	1336.58	-
III	Green	-	13319	-	13319	-
	Dry	1153	-	-	731	422

	Silage	-	-	-	-	-
	Concentrate	-	1516.92	-	1516.92	-
IV	Green	-	17327	-	17327	-
	Dry	422	-	-	422	Nil
	Silage	-	-	-	-	-
	Concentrate	-	1442.32	-	1442.32	-
Total	Green	-	54121	-	54121	-
	Dry	-	2559	-	2559	Nil
	Silage	-	-	-	-	Nil
	Concentrate	-	-	-	5646.01	Nil

9.17: Milk performance during April 2021 to March 2022

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 21	119	25	143	83	8.31	6.86
May	112	37	149	75	7.71	5.35
June	98	53	151	64	7.04	4.52
July	87	65	151	57	7.12	4.09
Aug	83	69	152	55	7.85	4.29
Sep	83	58	141	60	9.05	5.42
Oct	90	49	139	64	9.29	5.98
Nov	98	43	141	70	9.54	6.67
Dec	99	47	146	68	10.03	7.0
Jan 22	111	49	160	69	10.29	7.14
February	120	49	169	71	9.99	7.06
March	121	42	163	75	9.13	7.0
Overall	**102**	**49**	**151**	**67**	**8.78**	**5.96**

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of Animals dry	Total Animals	% in Milk	Wet Av. (kg)	Herd Av. (kg)
1992-93	98	53	151	64	5.86	3.42
1993-94	81	58	139	58	5.75	3.39
1994-95	92	44	136	67	6.01	4.18
995-96	86	35	121	71	5.61	3.99
1996-97	81	52	133	61	5.71	3.49
1997-98	113	40	153	74	6.03	4.45
1998-99	104	42	146	72	6.13	4.26
1999-00	85	39	124	68	6.01	4.23
2000-01	96	33	129	74	6.31	4.69
2001-02	86	38	124	69	6.85	4.82
2002-03	106	38	144	73	6.56	4.83
2003-04	106	37	143	74	6.35	4.70
2004-05	100	47	147	67	6.86	4.65
2005-06	114	46	160	71	6.85	4.84
2006-07	119	48	167	71	6.20	4.40
2007-08	102	54	156	65	6.73	4.46
2008-09	122	44	166	73	6.91	5.03
2009-10	110	58	168	65	7.00	4.66
2010-11	98	43	141	70	7.11	4.93
2011-12	84	40	124	68	7.74	5.30
2012-13	90	49	139	65	8.26	5.34

2013-14	94	52	146	64	8.25	5.32
2014-15	99	41	140	71	8.48	5.98
2015-16	110	41	151	72	8.51	6.22
2016-17	102	53	155	65	7.96	5.23
2017-18	97	45	142	68	8.52	5.84
2018-19	109	38	147	74	8.82	6.54
2019-20	104	50	154	68	9.18	6.25
2020-21	101	44	145	70	9.03	6.38
2021-22	**102**	**49**	**151**	**67**	**8.78**	**5.96**

9.18: Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation durin 2020-21
674	3rd	08		
511	8th	02		
435	8th	06		
480	8th	04		
507	8th	04		
543	8th	07		
501	8th	06		
551	9th	08		
556	9th	05		
579	9th	12		
705	9th	14		
710	9th	01		
Total		**77**		
411	1st	09	02	-
473	1st		02	-
535	2nd		02	-
25	5th			01
254	6th		01	05
252	6th			10
168	6th			10
245	6th			01
181	6th			02
298	7th		10	05
308	7th		09	05
312	7th		09	03
336	7th		17	06
Total			**52**	**48**

9.19 Bull wise daughters completing 1st lactation

Sr. No.	Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
1	252	634	19-12-16	08-08-20	43.68	237	1969	1969
2		615	10-09-16	13-07-20	46.12	312	2748	2730
3		602	13-08-16	21-09-20	49.34	256	2312	2312
4		614	07-09-16	14-03-20	42.24	489	4975	3579
5		621	28-09-16	27-07-20	45.99	382	2501	2186
6		653	16-03-17	30-11-20	44.57	298	2533	2533
7		650	21-02-17	28-12-20	46.25	305	2193	2193
8		618	14-09-16	28-09-20	48.52	424	3480	2754
9		640	16-01-17	09-12-20	46.81	352	2994	2728

10		643	20-01-17	02-03-21	49.41	290	1944	1944
11	245	572	2-12-15	14-05-21	54.08	319	2620	2584
12	254	619	14-09-16	14-08-20	47.04	336	2456	2369
13		652	13-03-17	21-08-20	42.37	312	2310	2307
14		655	28-04-17	21-09-20	40.86	333	2910	2811
15		637	29-12-16	30-11-20	47.11	298	1765	1765
16		642	18-01-17	28-01-21	48.39	323	2517	2474
17	168	607	25-08-16	17-08-20	47.80	228	1583	1583
18		633	14-12-16	28-07-20	43.49	255	2243	2243
19		625	19-10-16	16-07-20	44.93	295	1968	1968
20		638	09-01-17	09-07-20	42.01	302	2177	2177
21		603	15-08-16	20-07-20	47.20	319	2580	2559
22		649	16-02-17	21-09-20	43.19	263	1293	1293
23		645	26-01-17	28-09-20	44.11	277	1779	1779
24		641	18-01-17	15-01-21	47.96	273	2172	2172
25		639	16-01-17	28-12-20	47.43	340	2900	2743
26		644	23-01-17	14-12-20	46.74	354	2028	1884
27	25	527	16-07-15	24-03-20	56.35	388	3076	2797
28	181	622	29-0916	26-8-20	46.94	254	1830	1830
29		654	12-04-17	03-08-20	39.77	375	2353	2112
30	336	678	19-09-17	02-11-20	37.50	242	1387	1387
31		686	17-10-17	19-04-21	42.11	249	2156	2156
32		683	06-10-17	03-05-21	42.93	242	1700	1700
33		679	25-09-17	12-05-21	43.59	247	1922	1922
34		663	26-07-17	06-05-21	45.39	230	2220	2220
35		692	20-11-17	19-04-21	40.99	305	2689	2689
36	308	669	19-08-17	12-12-20	39.84	363	3577	3196
37		666	04-08-17	11-01-21	41.32	382	3031	2681
38		723*	25-04-18	27-08-21	40.13	175	1246	1246
39		694	29-12-17	12-07-21	42.47	228	1615	1615
40		689	06-11-17	04-09-21	45.99	195	1066	1066
41	312	688	23-10-17	13-01-21	38.75	331	2212	2140
42		697*	15-01-18	26-07-21	42.37	151	515	515
43		713	05-03-18	03-30-21	36.88	311	2199	2195
44	298	665	03-08-17	19-04-21	44.57	291	1747	1747
45		673	04-09-17	24-06-21	45.69	246	2453	2453
46		714	19-03-18	27-08-21	34.31	203	1078	1078
47		664	27-07-17	03-05-21	45.26	332	2938	2850
48		670	21-08-17	20-05-21	45.00	315	3279	3251

**Heifers (723 & 697) with exceptionally low SLMY (1246 & 515 kg, respectively) were considered as outliers.*

9.20 Breeding bulls Selected for current set (9th set)

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dams best SLMY (kg) / Parity	Semen doses available	Expected predicted Difference (EPD)
1	551	22-07-2015	940	63	3317/5th	5725	-
2	556	10-08-2015	366	R-1	3277/2nd	5399	-
3	561	25-08-2015	367	25	3888/3rd	140	-
4	565	02-09-2015	134	63	4050/3rd	126	-
5	579	26-10-2015	827	245	3199/6th	1529	-
6	593	22-12-2015	81	168	3746/5th	00	-
7	674	19-01-2017	68	252	3161/6th	4487	-
8	705	10-07-2017	115	473	3146/4th	2661	-
9	710	25-07-2017	398	252	3395/2nd	108	-

9.20.1 PT Bulls for nominated mating

Bull No.	Set No.	Centre	Dams' Best yield	Sire Index	Breeding Value	% Superiority
411	1 st	CIRB Nabha	2352	2315.49		25.07
473	1st	CIRB Nabha	2324	1961.74		10.01
523	2nd	CIRB Nabha	2390	2058.79		11.24
535	2rd	CIRB Nabha	3208	2061.91		10.85
674	3rd	CIRB Nabha	3350	2388.91		9.39
702	3rd	CIRB Nabha	3421	2376.83		8.88
905	4th	CIRB Nabha	3639	2561.40		15.29
916	4th	CIRB Nabha	2961	2424.74		9.99
27	5th	CIRB Nabha	3979	2488.10	22.36	6.79
03	5th	CIRB Nabha	2866	2401.22	29.37	4.47

9.20.2 List of Future breeding bulls for 10th set

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dams best SLMY (kg) / Peak yield	Semen doses available	Expected predicted Difference (EPD)
1	728	16.08.17	376	298	4018/22.0	Selected	-
2	753	07.12.17	287	312	4247/21.5	Selected	-
3	772	09.04.18	488	312	3542/16.3	Waiting	-
4	773	10.04.18	448	312	3725/17.0	Selected	-
5	782	04.05.18	451	298	3587/17.7	Selected	-
6	785	01.06.18	344	411 PT	3790/19.3	Selected	-
7	800	01.08.18	312	308	3134/18.5	Selected	-
8	812	18.09.18	134	411 PT	4050/17.5	Selected	-
9	831	15.12.18	503	359	4771/21.2	Selected	-
10	852	14.07.19	294	702 PT	3771/17.4	Selected	
11	854	29.07.19	561	352	3345/19.7	Selected	
12	856	05.08.19	450	352	4202/23.8	Selected	
13	858	08.08.19	445	352	3422/14.8	Selected	
14	865	16.08.19	453	352	3374/15.8	Waiting	
15	872	27.08.19	103	905 PT	3436/17.5	Selected	
16	881	04.10.19	362	516	4021/22.5	Selected	
17	883	07.10.19	529	487	3507/15.8	Selected	
18	884	09.10.19	376	511	4018/22.0	Selected	

9.21 Target achieved during the years

Traits	Target	2017-18	2018-19	2019-20	2020-21	2021-22
Av. AFC (Months)	40.0	41.05 (49)	40.61 (55)	41.78 (42)	44.66 (39)	43.62 (51)
Av. service period (Days)	130	136 (95)	129 (77)	157 (94)	136 (106)	116 (85)
Calf mortality (0-3 months) Revised 2019-20 (17th ARM)	≤ 5 % ≤ 3 %	5.06 %	5.23%	4.55%	8.72 %	5.42
Wet average (Kg)	≥ 8.50 kg	8.52 kg	8.82	9.18	9.03	8.78
Herd average (Kg)	≥ 5.50 kg	5.84 kg	6.54	6.25	6.38	5.96

10. Salient Research Achievements:

8 Sets of bulls completed test mating. Progeny testing was completed up to 4th Set. A total of 146 (80 female & 66 male) calves of high genetic merit were born during this period. Test mating (368 inseminations) were carried out during this period resulting in 165 pregnancies. Nominated mating (29 inseminations) using progeny tested bulls of first 4 sets were also carried out resulting in 14 pregnancies. The overall conception rate during this period was 45.08%. During this period, 32 daughters of 06 bulls under progeny testing programme completed 1st lactation. The wet average (9.03 kg), herd average (6.38 Kg), 305 days lactation milk yield (2594 kg), total lactation milk yield (2647 kg), peak yield (13.78 kg,

highest ever) and lactation length (300 days) were achieved in Nili-Ravi herd. The reproductive traits viz., service period (136 days), calving interval (444 days), dry period (144 days) were achieved during the year 2020-21. Herd Life Production (up to 4th or more Lactation completed) of 40 buffaloes was estimated. The average productive days were 1519 and average milk yield per day of herd life was 4.28 litres. A total of 18,890 semen doses were produced at the Sub Campus or procured from semen station Nabha. Out of which, 4450 doses were used at CIRB Nabha, GADVASU Ludhiana and NBAGR Karnal for insemination/testing and 3100 doses were sold to field inseminators. Overall motility of 5.4% and calf motility of 12.7% was recorded during this period. Milk production of 335719.1 kg was recorded during this year, and 284072.5 kg (Highest ever) was sold. Total 153 animals were sold through public auction and 06 bulls were sold to farmers, universities and various developmental agencies on book value.

11. Publications: Paper in research journals:

- MH Jan, H Kumar, S Kumar, WA Malla, RK Sharma. 2021. Comparative biochemical profiles, utero-ovarian function, and fertility of the postpartum buffalo with and without subclinical endometritis. *Tropical Animal Health production,* 53(1): 73.

Presentation in workshops/ seminars/ Symposia/ conferences:

12. Teaching/Training/Conducting programmes/Workshops/Seminars

Teaching/Training/Conducting programmes/Workshops/seminars	Venue	Participants	Date
Training on "Scientific Buffalo Husbandry Practices" under SCSP	CIRB, Sub-Campus, Nabha	Farmers (30)	08-15 March, 2021

13. Constraints if any:

- Difficulty in introduction of germplasm from outside herd through purchase of animals.
- Deficiency of suitable infrastructure for collection and processing of semen as per MSP guidelines
- Activity monitoring system and automation of data recording is needed.
- Timely allocation of budget to the Sub-Campus so that activities, works, purchases, etc can be planned meticulously.

14. Focus of work in the coming year

- Exploration of methods (hormonal, managemental) to increase conception rate in buffaloes.
- Improvement of production and reproduction performance indicators through breeding, nutritional, hormonal and managemental interventions.
- Testing of bulls of IXth set for progeny testing programme.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR	Expenditure as per AUC		Balance
Total	ICAR Share	Share as per R E	ICAR Share	State Share	ICAR Share
42.00*	36.00+6.0*	42.00*	42.00	0.00	0.00

* Includes Rs. 6.00 lakhs for SCSP

Herd Performance

Herd strength was 486 out of which 251 were breedable buffaloes (>2year). During the period 147 calving took place consisting of 70 males, 77 females, 3 still births and 20 abortions. The calf mortality (0-3 months) was decreased (5.42 %) as compared to previous year (8.72%). Conception rate was 50.64% improved from last year (45.08 %). 16797 semen doses produced during 2021-22 and the centre has used 1424 doses for AI/Exp. purpose. Total 2725 frozen semen doses were sold to developmental agencies and farmers.

Average lactation milk yield (kg) and 305 or less day lactation milk yield was 2609 kg (130) and 2535 kg (130) decreased from last year (2020-21) 2647 kg (114) and 2594 kg (114) respectively. Average lactation length reported 294 days (130). Reproductive performance viz. Age at first calving, Service Period, Dry Period and Calving Interval were 43.62 (51) months, 116 (85) days, 130 (85) days and 419 (85) days, respectively. During the reporting period the wet averages decresed from 9.03 kg to 8.78 kg and herd average from 6.38 kg to 5.96 kg, respectively from last year 2020-21. Total 67% animals were in milk 70.00 % in year 2021-22.

Accomplishment and Targets Achieved:

Sr. No.	Traits	Target	2017-18	2018-19	2019-20	2020-21	2021-22
1	Av. AFC (Months)	40.0	41.05 (49)	40.61 (55)	41.78 (42)	44.66 (39)	43.62 (51)
2	Av. service period (Days)	130	136 (95)	129 (77)	157 (94)	136 (106)	116 (85)
3	Calf mortality (0-3 months) Revised 2019-20 (17th ARM)	≤ 3 %	5.06 %	5.23%	4.55%	8.72 %	5.42
4	Wet average (Kg)	≥ 8.50 kg	8.52 kg	8.82	9.18	9.03	8.78
5	Herd average (Kg)	≥ 5.50 kg	5.84 kg	6.54	6.25	6.38	5.96

Recommendations:

- Efforts should be made for consistant improvement in the milk production traits.
- Need to increase the production and dissemination of frozen semen doses.

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH (GUJARAT)

1. Name of center : Cattle Breeding Farm,Junagadh Agricultural University, Junagadh.
2. Project Code : 18-3 / 97-ASR - II dt. 29 / 03 / 2001
3. **Project Title :** Network Project on Buffalo Improvement (Jaffarabadi)
4. **Date of Start :** 01/ 04 / 2001
5. **Objectives** :

To establish elite herd of 60 - 70 Jaffarabadi for the production of genetically superior young bulls. To evaluate sires through institutional / associated herd/field progeny testing and to produce, test, propagate and conserve high genetic merit male germplasm

6. **Technical Programme:**

- Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 500 and 300 breedable females (Murrah).
- Selection and testing of minimum 15 bulls of Murrah / 4-6 bulls for other breeds in every 18 / 24 months cycle.
- Production of minimum 10,000 (Murrah) and 3000 to 5000 (Other breeds) frozen semen doses from each test bull.
- Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated.
- Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
- Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
- Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation). New Table
- Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
- Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
- Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Staff associated with the project:

Discipline	Name of Scientist / Staff	Status PI/Co-PI/ Associated
Asst. Rec. Sci.	R.B. Makavana	Associated

8. **Financial Statement** : **2305/03 Year: 2021-22 (ICAR Share Rs. In lakhs)**

Item / Head	**Remmitance ICAR Share**	**Expenditure (75 % ICAR Sahre)**	**State Share (25%)**	**Balance**
Pay & Allowances	**16.50**	**8.54202**	**2.84734**	**7.95798**
Contingency	**40.50**	**40.30366**	**13.43456**	**0.19634**
Equipments	**1.50**	**1.48620**	**49.540**	**0.01380**
Sub Total	**58.50**	**50.33188**	**16.77730**	**8.16812**
SCSP Sub Total.	**4.00**	**3.36272**	**-**	**0.63728**
Grand Total	**62.50**	**53.6946**	**16.77730**	**8.80540**

9.1 Herd Strength during the Period 1st April 2021 to 31st March, 2022

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P	T	D	T	S	E	CB
	Female								
1.	Below 3 months	7	46		5	42			9
2.	3-12 months	25		42		28			33
3.	1-2 years	31		28		35			29
	Above 2 years	88		35	1	22	6		98
4.	Buffaloes in Milk	80		85		62	10		74
5.	Buffaloes Dry P /NP	45		62	8	63	12		30
	Sub Total	**276**	**46**	**252**	**14**	**252**	**28**	**0**	**273**
	Males								
1.	Below 3 months	4	37		6	34			8
2.	3-12 months	32		34	7	16			23
3.	1-2 years	20		16	1	33			16
	Above 2 years	1		33		1			35
4.	Breeding bulls	17			1		1		13
5.	Bullocks / Teasers / others	1		1					1
	Sub Total	**75**	**37**	**84**	**15**	**84**	**1**	**0**	**96**
	Grand Total	**351**	**83**	**336**	**29**	**336**	**29**	**0**	**369**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 2021	1	1	0	0				2
May	1	1	0	0				2
June	2	4	0	0				6
July	2	2	0	1				5
August	4	1	0	0				5
September	6	7	0	0				13
October	6	9	0	0				15
November	5	6	0	0				11
December	1	5	0	0				6
January 22	2	6	1	0				9
February	3	1	0	0				4
March	4	3	0	0				7
Overall	**37**	**46**	**1**	**1**				**85**

Sex ratio Male : Female (44.6 : 55.4) SB% = 1.20 Abortion % = 1.20

9.3. Disposal of Animals during the Period 1st April 21 to 31st March 2022

Female	Primary cause of disposal							
Category	Surplus	Below farm prod. standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves 0 to 3 months 3-12 months						5		5
Heifers 1-2 years > 2 years	6					1		7

Buffaloes Milch Dry	 10 12					 8		 10 20
Sub Total	28					14		**42**
Males	**Primary cause of disposal**							
Calves 0 to 3 months 3-12 months						 6 7		 6 7
1 to 2 year						1		1
. >2 year								
Breeding bulls	1					1		2
Bullock+Teaser+ Others								
Sub Total	**1**					**15**		**16**
Grand Total	**29**					**29**		**58**

9.4. Mortality during the Period 1st April 2021 to 31st March, 2022

Month		Female						Male					Overall Herd
		0-3 Month	3-12 Month	1-2 Yrs.	Above 2 Yrs.	Milk + Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
April	No.	5	23	36	91	114	269	6	18	34	17	75	344
	Died	1					1	1				1	2
	%	20.0	0.0	0.0	0.0	0.0	0.4	16.7	0.0	0.0	0.0	1.3	0.6
May	No.	3	27	35	87	109	261	3	21	34	18	76	337
	Died						0					0	0
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	No.	6	27	35	88	109	265	6	22	34	18	80	345
	Died						0					0	0
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	No.	6	26	35	87	111	265	8	18	34	22	82	347
	Died	2					2		1			1	3
	%	33.3	0.0	0.0	0.0	0.0	0.8	0.0	5.6	0.0	0.0	1.2	0.9
Aug.	No.	8	26	29	90	114	267	10	19	24	32	85	352
	Died				1		1	1				1	2
	%	0.0	0.0	0.0	1.1	0.0	0.4	10.0	0.0	0.0	0.0	1.2	0.6
Sep.	No.	12	27	29	88	116	272	12	20	24	33	89	361
	Died					2	2		1			1	3
	%	0.0	0.0	0.0	0.0	1.7	0.7	0.0	5.0	0.0	0.0	1.1	0.8
Oct.	No.	18	28	23	88	123	280	14	21	16	42	93	373
	Died					1	1	2				2	3
	%	0.0	0.0	0.0	0.0	0.8	0.4	14.3	0.0	0.0	0.0	2.2	0.8
Nov.	No.	21	20	29	90	123	283	16	18	18	45	97	380
	Died	1				2	3		1			1	4
	%	4.8	0.0	0.0	0.0	1.6	1.1	0.0	5.6	0.0	0.0	1.0	1.1
Dec.	No.	19	24	27	93	124	287	11	21	14	48	94	381
	Died						0		0	1		3	3
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	7.1	0.0	3.2	0.8
Jan.	No.	16	27	28	96	125	292	7	22	13	52	94	386
	Died					1	1	1	1			2	3
	%	0.0	0.0	0.0	0.0	0.8	0.3	14.3	4.5	0.0	0.0	2.1	0.8
Feb.	No.	12	29	30	96	125	292	5	22	16	51	94	386
	Died					2	2	1	1		1	3	5
	%	0.0	0.0	0.0	0.0	1.6	0.7	20.0	4.5	0.0	2.0	3.2	1.3
March	No.	9	33	29	98	125	294	8	23	16	51	98	392
	Died	1					1					0	1

	%	11.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Overall Av.	No.	**56**	**33**	**29**	**98**	**125**	**341**	**48**	**23**	**16**	**51**	**138**	**479**
	Died	**5**	**0**	**0**	**1**	**8**	**14**	**6**	**5**	**1**	**1**	**15**	**27**
	%	**8.9**	**0.0**	**0.0**	**1.0**	**6.4**	**4.1**	**12.5**	**21.7**	**6.3**	**2.0**	**10.9**	**5.6**

9.5. Causes of Mortality (quarter wise) during the period April 2021 to March 2022

Particulars	**1st quarter (April-June)**	**2nd quarter (July-Sept)**	**3rd quarter (Oct-Dec.)**	**4th quarter (Jan.-March)**	**Total**
Enteritis	1	2	2		5
Pheumonities	1	1	1	4	7
Septicamia / Toxaemia		1	2	1	4
Peritonitis					
JD/TB					
Milk Fever / metabolic diseases					
TRP / TP		1			1
Parasitism		1		1	2
Accidental death		2	2		6
Peri-parturient disorders					
Miscellaneous					
Old Age Senility			1	3	4
Total	**2**	**8**	**8**	**9**	**27**

9.6 Prophylactic Measures undertaken

Disease	**Vaccination Date / No. of animals**	**No. of animals** Tested / Positive		**Dates and No. of animals treated for Parasitism**
FMD	339 - Jan. 2022			Deworming in June – 2021 339 Animals Jan. – 2022
HS	307 - June 2022			
BQ				
Brucellosis	34 – Female Calves June 2021 10 – Female Calves Jan. 2022			
JD		294	0	
TB		294	0	
IBR				
Mastitis				

9.7 Female Conception Rate During the Period January to December 2021

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR%	AIs	C	CR %
Heifers	14	8	57.14	6	3	50.00	3	3	100.00	9	6	66.67	32	20	62.50
Adults	53	19	35.85	39	11	28.21	18	7	38.89	5	4	80.00	115	41	35.65
Overall	**67**	**27**	**46.50**	**45**	**14**	**39.10**	**21**	**10**	**69.44**	**14**	**10**	**73.33**	**147**	**61**	**41.50**

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate

Quarter	No. of A I	Preg. animals	CR %
January – March (Previous year)	63	24	38.10
April - June	19	7	36.84
July - September	16	9	56.25
October- December	49	21	42.86
Overall	**147**	**61**	**41.50**

9.9. Bull-wise Conception Rate During the period 2021-22

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1	Alok	III	4	3	75.00
2	Chaman	III	5	4	80.00
3	Girish	III	12	7	58.33
4	Madhav	III	4	2	50.00
5	Raghu	III	7	4	57.14
6	Hamir	IV	19	5	26.32
7	Sango	IV	25	13	52.00
8	Nayak	IV	14	2	14.29
9	Janak	IV	16	7	43.75
10	Badal	IV	20	6	30.00
11	Kamlesh	IV	12	2	16.67
12	Mayur	IV	9	6	66.67
Over all			**147**	**61**	**41.50**

No. of services per conception:

9.10 Bull Wise Semen Stock 2021-22

Sr.No	Set No	Bull No	O.B.	Doses produced / received	Doses used /disseminated				Balance
					Supply		Sold	Exp.	
					field	farm			
1	I	Nagraj	3259	0	0	0	0		3259
2	I	Bhagro	6845	0	0	0	0		6845
3	I	Laxman	3417	0	0	0	0		3417
4	II	Haresh	1790	0	0	0	0		1790
5	II	Moti	7728	0	0	0	0		7728
6	II	Raja	5785	0	0	0	0		5785
7	II	Sunder	3014	0	0	0	0		3014
8	II	Dhinglo	7191	0	0	0	0		7191
9	II	Bholenath	1839	0	0	0	0		1839
10	III	Nayan	6517	0	0	0	0		6517
11	III	Madhav	6689	0	0	0	0		6689
12	III	Abhijeet	5916	0	0	0	0		5916
13	III	Alok	9370	95	0	0	10		9455
14	III	Ronak	5140	0	0	0	0		5140
15	III	Girish	4556	0	0	0	0		4556
16	III	Raghu	4747	0	0	0	0		4747
17	III	Babar	9275	0	0	0	0		9275
18	III	Chaman	9895	3155	0	0	300		12750
19	IV	Badal	6960	0	0	10	0		6950
20	IV	Kamlesh	825	775	0	10	0		1590
21	IV	Mayur	1280	0	0	10	0		1270
22	IV	Balo	9825	165	0	0	0		9990
23	IV	Janak	4667	1260	0	0	0		5927
24	IV	Hamir	5130	1945	0	10	0		7065
25	IV	Sango	1940	955	645	10	90		2150
26	IV	Nayak	2604	1135	1155	0	45		2539
27	IV	Samrat	2430	1775	0	0	0		4205
Grand Total			**138634**	**11260**	**1800**	**50**	**445**	**0**	**147599**

9.11 Average Body weight (kg) since inception…. (Indicate number of animals in parenthesis)

Year	Birth	3 Month	6 Month	12 Month	18 Month	24 Month	Heifer	Adult
Female								
2004-05	29.69	70.53	112.38	161.55	215.69	258.64		457.23
2005-06	32.01	69.40	106.28	155.30	216.57	260.35		458.40
2006-07	33.60	70.72	105.70	154.10	217.24	259.69		449.89
2007-08	32.23	71.70	110.80	169.85	229.80	288.40		566.78
2008-09	30.74	69.25	107.35	166.20	228.69	290.84		559.17
2009-10	29.61	68.20	105.40	164.80	230.70	294.51		555.17
2010-11	29.65	68.90	106.25	232.17	-	443.89		592.45
2011-12	33.60	82.00	142.00	237.40	308.70	444.50		586.00
2012-13	31.80	67.60	100.20	158.10	268.60	362.20		565.40
2013-14	32.40	73.40	122.4	172.1	266.90	314.33		---
2014-15	33.60	87.75	118.20	200.00	269.78	315.14		650.00
2015-16	33.12	87.75	117.45	197.66	269.80	316.17	396.50	649.70
2016-17	29.03	78.00	118.04	180.85	270.59	316.80	380.01	651.28
2017-18	34.85	95.18	115.08	180.08	272.05	388.10	419.50	640.30
2018-19	31.90	74.05	117.81	173.00	265.00	353.00	383.00	480.00
2019-20	32.54	75.92	123.39	177.63	271.12	367.40	384.72	504.10
2020-21	33.71	78.90	130.40	181.60	275.16	370.23	401.70	507.60
2021-22	**34.60**	**81.30**	**132.40**	**183.70**	**278.20**	**378.70**	**409.90**	**511.50**
Male						**Adults**		
2004-05	31.90	71.24	109.54	164.12	225.14	272.80		--
2005-06	34.71	72.61	106.61	152.57	223.47	269.62		--
2006-07	33.98	71.72	107.05	156.70	222.29	265.23		--
2007-08	36.62	73.14	114.00	171.60	234.50	289.35		--
2008-09	32.51	70.10	110.58	169.30	236.72	295.32		--
2009-10	32.59	70.75	109.52	170.10	238.89	297.32		--
2010-11	29.97	69.93	139.00	285.40	360.00	412.33		--
2011-12	30.90	85.00	178.00	255.30	357.00	409.00		--
2012-13	33.00	79.80	120.90	158.60	289.40	375.80		--
2013-14	33.60	78.00	118.40	160.00	234.60	329.75		--
2014-15	33.47	86.00	108.90	171.50	232.83	331.90		--
2015-16	32.30	85.17	111.90	172.40	231.00	332.00		769.79
2016-17	30.09	78.20	114.00	180.06	223.72	273.72		684.25
2017-18	32.91	91.75	114.26	182.41	235.50	281.45		655.30
2018-19	32.20	76.05	119.05	183.71	272.00	372.00		605.00
2019-20	34.64	78.06	121.22	188.57	283.17	393.63		630.00
2020-21	34.86	79.10	132.90	191.70	286.41	389.64		626.81
2021-22	**35.70**	**80.90**	**133.80**	**193.30**	**291.30**	**387.80**		**621.70**

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	13	2253.0 ± 206.4	324.6 ± 27.8	2073.4 ± 155.1	11.8 ± 0.7
2nd	16	2536.0 ± 227.0	303.4 ± 14.2	2471.8 ± 203.5	15.3 ± 0.8
3rd	16	2450.3 ± 214.9	278.4 ± 14.6	2416.6 ± 201.8	15.9 ± 1.3
4th	06	2475.4 ± 136.9	298.8 ± 13.8	2450.8 ± 126.4	15.6 ± 0.4
5th & above	09	2577.3 ± 400.9	287.1 ± 26.0	2514.6 ± 385.8	16.0 ± 1.4
Overall	**60**	2452.0 ± 110.2	298.5 ± 9.1	2375.1 ± 101.2	14.8 ± 0.5

9.12.1 Average production performance of Buffaloes Since Inception of Network

Year	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak yield (kg)
2001-02	303.29 (38)	1945.58 (38)	1813.72 (38)	12.77 (38)
2002-03	358.46 (39)	2028.18 (39)	1793.85 (39)	09.32 (39)
2003-04	406.00 (41)	2534.80 (41)	2069.10 (41)	11.30 (41)
2004-05	316.00 (36)	2122.40 (36)	2020.80 (36)	11.80 (36)
2005-06	311.00 (41)	1957.57 (41)	1771.96 (41)	10.34 (41)
2006-07	343.00 (38)	1953.42 (38)	1695.00 (38)	10.20 (38)
2007-08	338.00 (39)	2026.88 (39)	1807.05 (39)	10.53 (39)
2008-09	318.28 (29)	2009.28 (29)	1769.90 (29)	11.26 (29)
2009-10	382.72 (46)	1837.65 (46)	1779.61 (46)	11.43 (46)
2010-11	317.70 (44)	2134.70 (44)	2098.30 (44)	11.36 (44)
2011-12	332.20 (30)	2383.08 (30)	2083.92 (30)	12.23 (30)
2012-13	352.00 (39)	2007.00 (39)	1737.0 (39)	9.70 (39)
2013-14	305.2 (33)	1709.3 (33)	1629.2 (33)	10.30 (33)
2014-15	379.1(37)	2396.7 (37)	2095.7 (37)	11.8 (37)
2015-16	322.1 ± 12.3 (48)	2187.0 ± 86.9 (48)	2008.7 ± 72.0 (48)	13.1 ± 0.4 (48)
2016-17	323.2± 9.8(45)	2119.6± 102.7(45)	1985.4± 80.6(45)	12.8± 0.4(45)
2017-18	383.2 ± 12.1(47)	2242.8 ± 108.8(47)	1907.3 ± 89.3(47)	11.4 ± 0.4(47)
2018-19	317.3 ± 7.6(57)	2500.6 ± 99.2(57)	2359.8 ± 85.1(57)	14.7 ± 0.5(57)
2019-20	315.6 ± 14.4 (56)	2408.5 ± 105.7 (56)	2245.1 ± 76.3 (56)	14.3 ± 0.3 (56)
2020-21	359.6 ± 10.5(56)	2794.2 ± 113.7(56)	2499.9 ± 78.7(56)	14.4 ± 0.3(56)
2021-22	**298.5 ± 9.1 (60)**	**2452.0 ± 110.2(60)**	**2375.1 ± 101.2(60)**	**14.8 ± 0.5(60)**

9.12.2 Herd Life Production (up to 4th Lactation) during 2021-22

Animal No.	DOB	Date of completion of 4th or more lact. or disposal	HLF (days) up to 4th or more lactation or disposal (d)	LTMY (kg)	Productive Days	Unproduc-tive Days	MY/day HLF
03/13	14/01/2013	18/03/2021	2985	8273.9	1022	596	5.1
15/07	06/07/2007	19/12/2021	5280	12290.4	2188	1583	3.3
31/07	14/11/2007	08/01/2019	4073	10384.6	1654	1057	3.8
08/08	17/07/2008	01/04/2021	4641	9438.1	1488	1595	3.1
14/09	18/07/2009	16/12/2021	4534	10560.3	1821	1113	3.6
22/09	09/08/2009	01/05/2021	4283	4958.5	794	979	2.8
23/09	15/08/2009	31/12/2021	4521	19719.6	2018	711	7.2
27/09	26/08/2009	08/09/2021	4396	18635.8	1987	943	6.4
22/10	20/08/2010	22/11/2021	4112	3518.8	754	2253	1.2
28/10	09/09/2010	04/06/2021	3921	8473.6	1444	1381	3.0
05/11	09/06/2011	27/01/2022	3885	9858.4	1287	840	4.6
19/11	07/08/2011	28/08/2021	3674	7872.4	1197	807	3.9
21/11	10/08/2011	29/12/2020	3429	6283.5	1306	627	3.3
03/12	01/04/2012	31/07/2021	3408	7290.4	972	645	4.5
06/12	13/05/2012	29/12/2020	3152	9215.3	1222	348	5.9
15/13	22/08/2013	31/12/2021	3053	9527.7	1131	306	6.6
32/12	01/10/2012	14/03/2022	3451	6636.4	1194	1092	2.9
36/09	15/09/2009	13/05/2021	4258	6255.2	1321	1506	2.2
36/11	02/09/2011	01/12/2021	3743	9973.8	1257	696	5.1
38/13	21/09/2013	17/11/2021	2979	4305.3	676	700	3.1
41/11	28/09/2011	01/01/2022	3748	5447.7	671	1525	2.5
45/08	14/10/2008	29/12/2020	4459	9888.1	1600	1415	3.3
47/11	01/11/2011	24/09/2021	3615	7893.9	1249	975	3.5

49/09	03/10/2009	31/07/2021	4319	16852.1	2027	859	5.8
50/10	20/10/2010	30/12/2020	3724	9565.7	1428	900	4.1
52/11	01/12/2011	26/03/2022	3768	4474.5	703	1510	2.0
53/11	27/12/2011	19/02/2022	3707	4255.3	557	1497	2.1
19/08	08.09.2008	05/02/2022	4898	12299.1	1602	1482	4.0
45/04	27/09/2004	06/02/2022	6341	16502.8	2712	1870	3.6
27/10	04/09/2010	15/09/2020	1741	6239.0	1009	732	3.6
36/08	01/10/2008	28/10/2020	1769	6698.2	1111	658	3.8
47/11	01/11/2011	29/12/2020	1570	9680.3	1222	348	6.2
21/11	10/08/2011	18/03/2021	1618	8798.2	1022	596	5.4

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. Or date of disposal)
Productive Days (date of first calving to total days in milk), **Unproductive days** (total days when buffalo not give milk from the date of first calving)

9.13 Average Milk Composition from April 2021 to March 2022

Month	**N**	**Fat**	**SNF**	**Protein**	**Lactose**	**SCC**
April 2021	46	7.7	10.7	4.7	6.2	--
May	46	8.1	10.8	4.2	5.4	--
June	49	8.0	11.8	4.3	5.8	--
July	49	7.8	10.8	4.2	5.6	--
August	48	8.0	11.2	4.4	5.7	--
September	53	8.5	11.1	4.0	5.6	--
October	62	7.9	11.3	4.4	5.9	--
November	69	7.8	11.0	4.3	5.9	--
December	65	8.0	10.9	3.9	6.0	--
January 2022	67	8.0	11.0	4.6	6.3	--
February	69	7.9	10.5	4.2	6.2	--
March	74	7.6	10.6	3.8	5.8	--
Overall	**58**	**7.9**	**11.0**	**4.3**	**5.9**	--

9.14: Reproductive Performance

Lactation / Parity	AFC (Months) (N)	N →	SP (Days)	DP (Days)	CI (Days)
1	46.90±1.82 (20)				
2		13	190.09±8.03	139.45±15.52	500.09±8.03
3		13	145.64±22.74	221.27±34.52	455.64±22.74
4		6	110.00±28.94	124.20±37.24	420.00±28.94
5th& above		9	111.00±25.36	208.18±32.52	421.00±25.36
Over all	**46.90±1.82 (20)**	**41**	**160.51±12.89**	**196.1±17.06**	**470.51±12.89**

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
2001-02	46.84 (13)	159.41 (33)	166.50 (33)	496.36 (33)
2002-03	47.02 (15)	155.12 (33)	179.66 (33)	465.79 (33)
2003-04	57.71 (3)	205.00 (23)	213.00 (23)	513.00 (23)
2004-05	59.44 (12)	225.00 (34)	195.00 (33)	539.00 (34)
2005-06	59.97 (16)	194.00 (45)	218.00 (45)	459.00 (45)
2006-07	55.57 (11)	188.00 (32)	267.00 (35)	499.00 (32)
2007-08	59.53 (07)	263.08 (24)	238.83 (24)	568.33 (24)
2008-09	59.52 (11)	302.69 (41)	249.62 (41)	543.67 (41)
2009-10	54.28 (20)	149.52 (45)	194.20 (45)	463.35 (45)

2010-11	52.66 (11)	127.40 (35)	168.70 (35)	436.80 (35)
2011-12	49.28 (06)	186.09 (23)	161.83 (23)	484.48 (23)
2012-13	49.31 (10)	174.00 (42)	464.58 (42)	217.16 (42)
2013-14	48.00 (24)	144.67 (33)	206.51 (43)	523.16 (43)
2014-15	46.60 (5)	140.43 (30)	176.53 (30)	450.43 (30)
2015-16	47.82 (11)	158.40 (42)	163.40 (42)	468.40 (42)
2016-17	49.80(12)	190.00(33)	184.70(33)	492.70(33)
2017-18	54.05(21)	149.85(48)	244.77(48)	530.94(48)
2018-19	49.90(22)	180.4 (35)	213.4 (35)	471.2 (35)
2019-20	46.1 ±1.4(24)	164.6 ±18.6 (43)	192.0 ±14.8 (43)	477.3 ±18.7 (43)
2020-21	47.81±0.86(10)	143.79±11.70(38)	181.03±16.06(38)	453.79±11.70(38)
2021-22	**46.90±1.82(20)**	**160.5±12.89(41)**	**196.1±17.06(41)**	**470.51±12.89(41)**

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April-2021	12491.5	12462.5	29.0	
May	12787.0	12775.0	12.0	
June	11856.0	11808.0	48.0	
July	12362.5	12332.5	30.0	
August	11108.5	11065.0	43.0	
September	9771.0	9703.0	68.0	
October	13029.5	12908.5	121.0	
November	15131.0	15073.0	58.0	
December	14560.5	14518.5	42.0	
January-2022	15091.5	15046.5	45.0	
February	14888.5	14855.5	33.0	
March	15718.5	15675.5	43.0	
Total	**158796.0**	**158223.5**	**572.0**	

9.16.1 Feed and fodder (Quintals) availability 2021-22

Quarter	Items	Qty. Produced at Farm (kg)	Qty. Purchased (kg)	Actually fed (Quintals)	Balance (Kg)
I (April – June)	Green	5924	0	5924	-
	Dry	45	630	675	-
	Silage	0	0	0	-
	Concentrate	0	935	935	-
II (July – September)	Green	4325	0	4325	-
	Dry	1210	0	1210	-
	Silage	0	0	0	-
	Concentrate	0	1070	1070	-
III (October –December)	Green	5420	0	5420	-
	Dry	470	190	660	
	Silage	0	0	0	-
	Concentrate	0	1050	1050	-
IV (January-March)	Green	5700	0	5700	-
	Dry	355	370	725	-
	Silage	0	0	0	-
	Concentrate	0	995	995	-
Total	Green	21369	0	21369	-
	Dry	2080	1190	3270	-
	Silage	0	0	0	
	Concentrate	0	4050	4050	-

9.17: Milk performance during April 21 to March 22

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April -2021	46	43	89	51.7	9.1	4.7
May	46	43	89	51.7	9.0	4.6
June	49	40	89	55.1	8.1	4.4
July	49	40	89	55.1	8.1	4.5
August	48	42	90	53.3	7.5	4.0
September	53	39	92	57.6	6.1	3.5
October	62	37	99	62.6	6.8	4.2
November	69	32	101	68.3	7.3	5.0
December	65	37	102	63.7	7.2	4.6
January-2022	67	37	104	64.4	7.3	4.7
February	69	36	105	65.7	7.7	5.1
March	74	30	104	71.2	6.9	4.9
Overall	**58.1**	**38.0**	**96.1**	**60.0**	**7.6**	**4.5**

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of Animals dry	Total Animals	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2001-02	40.00	31.00	71.00	56.19	5.44	3.01
2002-03	32.00	34.00	66.00	48.89	7.19	3.55
2003-04	26.00	35.00	61.00	41.26	8.03	3.30
2004-05	32.00	34.83	66.89	44.65	7.91	3.96
2005-06	33.00	46.58	79.58	41.80	7.45	3.08
2006-07	34.00	44.92	78.92	42.27	7.31	3.11
2007-08	30.75	40.58	71.42	42.87	7.52	3.21
2008-09	25.25	43.12	69.41	39.05	6.81	2.44
2009-10	37.63	47.93	85.56	43.85	6.46	2.85
2010-11	35.14	33.92	69.06	50.32	7.27	3.62
2011-12	27.67	20.08	47.75	58.03	6.91	4.06
2012-13	34.00	51.33	85.33	39.78	6.73	2.67
2013-14	34.00	47.42	81.42	40.64	6.90	2.83
2014-15	33.00	48.75	81.75	40.22	7.38	3.01
2015-16	37.0	47.30	84.30	43.90	8.10	3.50
2016-17	42.0	55.0	97.0	43.65	7.4	3.2
2017-18	42.0	49.0	91.0	45.1	6.7	3.0
2018-19	65.10	43.50	108.60	60.40	5.80	3.60
2019-20	64.40	62.20	126.60	50.90	6.30	3.20
2020-21	60.10	57.80	117.90	51.10	6.60	3.40
2021-22	**58.1**	**38.0**	**96.1**	**60.0**	**7.6**	**4.5**

9.18 Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
Gajanan				
Khemlo				
Bhagaro	I			
Raja	II			
Rana				
Nagraj	I		1	1

Moti	II			2
Sundar	II			
Ashok				
Laxman	I			1
Bholenath	II		1	1
Haresh	II		1	1
Dhingalo	II		1	2
Nayan	III			2
Madhav	III		2	2
Ronak	III		4	
Alok	III		4	1
Abhijit	III			
Raghu	III		4	
Chaman	III		1	
Girish	III		2	
Babar	III		1	
Badal	IV	3		
Kamlesh	IV	8		
Mayur	IV	9		
Balo	IV			
Janak	IV	5		
Hamir	IV	7		
Sango	IV	8		
Nayak	IV	6		
Samrat	IV			
Nakul	IV			
Total		**46**	**22**	**13**

9.19 Bull wise daughters completing 1ST lactation

Bull No.	Daug-hter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak Yield
Madhav	68/16	30-11-2016	02-02-2021	50.2	269	1029.8	1029.8	6.3
Nagraj	15/16	03-03-2016	21-07-2021	64.7	254	1456.6	1456.6	9.6
Alok	45/17	31-12-2017	29-09-2021	45.0	184	1457.8	1457.8	12.7
Madhav	58/16	12-10-2016	11-07-2020	45.0	264	1601.7	1601.7	10.5
Dhingalo	40/16	23-07-2016	22-11-2020	52.1	374	2069.8	1817.4	9.3
Nayan	60/16	15-10-2016	16-07-2020	45.1	281	2163.7	2163.7	12.3
Nayan	57/16	07-10-2016	13-07-2020	45.2	302	2196.8	2194.7	12.4
Haresh	37/16	11-07-2016	04-07-2020	47.8	299	2258.1	2258.1	11.9
Laxman	48/16	22-08-2016	08-06-2020	45.6	585	3522.3	2277.6	12.1
Moti	20/16	22-03-2016	07-04-2020	48.6	359	2744.7	2506.1	12.8
Dhingalo	36/16	08-07-2016	28-11-2020	52.8	259	2599.9	2599.9	15.6
Bholenath	38/16	12-07-2016	03-11-2020	51.8	392	2981.3	2725.3	13.8
Moti	63/16	04-11-2016	12-11-2020	48.3	398	3207.0	2865.9	13.8
Average				**49.4**	**324.6**	**2253.0**	**2073.4**	**11.8**
SE				**1.5**	**27.8**	**206.4**	**155.1**	**0.7**

9.20 Breeding bulls Selected for current set

Sr. No.	Set	Bull Name	Bull No	Date of Birth	Dam No.	Sire No.	Dam's best SLMY	Remarks
1	IV	Badal	3665	Purchased	--	--	>3000	
2	IV	Mayur	27/15	17/07/2015	Mina(AM 2/11)	Haresh	3181	
3	IV	Hamir	37/15	05/09/2015	Hedi(AM 4/11)	Bholenath	3616	
4	IV	Balo	43/15	29/09/2015	Babli(53/09)	Nayan	3201	
5	IV	Kamlesh	11081	Purchased	--	--	>3000	
6	IV	Janak	11084	Purchased	--	--	>3000	
7	IV	Sango	19100	Purchased	--	--	>3000	
8	IV	Samrat	11086	Purchased	--	--	>3000	
9	IV	Nayak	11087	Purchased	--	--	>3000	

9.20.1 PT Bulls for nominated mating

Bull No.	Set No.	Centre	Dams' Best yield (kg)	Sire Index	Breeding Value	% Superiority
Laxman	I	Junagadh	3738.0	2732.07	+9.05	
Moti	II	Junagadh	>3000	2730.36	+8.38	
Bhagaro	I	Junagadh	>3000	2672.21	+6.26	

9.20.2 List of breeding / young bulls as on 31-3-2022

Sr. No.	Name	Date of birth	Dam	Sire	Dams best lact.300days or less yield (kg)	Remarks
Set I						
1	Bhagro	Purchased	----	----	20 lit/d	CBF
2	Laxman	16-10-03	Laxmi	Subiraj	3738.0	CBF
3	Nagraj	18-12-02	Nagari	Rupnath	2957	CBF
Set II						
1	Haresh	08-02-04	Hitad	Hemalo	2884.0	2009-10
2	Moti	Purchased	--	--	>3000 litter	2010-11
3	Sunder	13-07-05	Sundari	Lailano	2732.0	2012-13
4	Raja	08-05-04	Ranjita	Subiraj	2948.0	2012-13
5	Dhingalo	Purchased	--	--	>3000 litter	2013-14
6	Bholenath	Purchased	--	--	>3000 litter	2013-14
Set III						
1	Nayan (07/10)	12-06-2010	Mira	Nagraj	4120.9 litter	
2	Abhijit (A1/10)	Purchased	Hedi		3184.2	
3	Madhav (37/10)	19-09-2010	Manisha	Nagraj	3895.8	
4	Alok	Purchased			>3500	
5	Ronak (09/11)	10-07-2011	Rita	Gajanan	3140.0	
6	Girish (11/13)	18-08-2013	Grishma	Dhingalo	3028.0	
7	Chaman	Purchased			>3500	
8	Raghu	Purchased			>3000	
9	Babar	Purchased			>3000	
Set IV						
1	Badal (3665)	Purchased	--	--	>3000	
2	Kamlesh (11081)	Purchased	--	--	>3000	
3	Mayur (27/15)	17/07/2015	Mina (AM 12/11)	Haresh	3181	
4	Balo (43/15)	29/09/2015	Babli (53/09)	Nayan	3201	
5	Janak (11084)	Purchased	--	--	>3000	
6	Hamir (37/15)	05/09/2015	Hedi (AM 04/11)	Bholenath	3616	
7	11086	Purchased	--	--	>3000	
8	11087	Purchased	--	--	>3000	
9	11088	Purchased	--	--	>3000	

9.21 Target achieved during the years

Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
Av. Age at first calving (months)	40	54.05 (21)	49.90 (22)	46.1 ±1.4 (24)	47.81±0.86 (10)	46.90±1.82 (20)
Av. Service period (days)	130	150 (48)	180 (35)	165±18.6 (43)	144±11.70 (38)	161±12.89 (41)
Calf mortality (0-3 months)	≤ 3 %	4.5	7.9	5.45	11.11	10.7
Wet average (kg)	≥8.5 kg	6.7	5.8	6.3	6.6	7.6
Herd average (kg)	≥5.5 kg	3.0	3.6	3.2	3.4	4.5

10. **Salient Research Achievements (example):**
11. **Publications :** --Nil--
12. **Socioeconomic impact / Success stories:**
13. **Constraints if any**
    - Allocated funds are insufficient for the project implementation satisfactorily.
    - Building / Buffalo sheds needs urgent renovations.
    - Separate Milking Parlour for Buffaloes is required.
    - Semen Freezing Laboratory needs renovation and extension to meet Minimum Standard.
14. **Focus of work in the coming year**
    - Efforts will be concentrated on improving reproductive performance of Jaffrabadi herd.
    - Semen Freezing Laboratory will be strengthened.

Performance of JAU, Junagadh (Field Units)

F 1. Herd Strength of Registered Females at Different Field Centres during 2021-2022

Sr No.	Centres/ Village	OB	Addition			Deduction		
			New Reg.	Birth	Purchase	Sold	Death	CB
1	Shedhaya	2134	20	14		60	8	2100
2	Pipali	3259	99	38		80	12	3304
3	Loej	14288	233	110		1881	17	12733
4	Surva	4108	94	50		190	6	4056
5	Mand likpur	4895	164	17		230	5	4841
6	Hadmdiya	1238	36	30		156	7	1141
7	Khorasa	1308	53	22		132	11	1240
8	Odadar	3541	150	56		147	9	3591
9	Gondal	340	20	7		3	2	362
	Total	**35111**	**869**	**344**	**0**	**2879**	**77**	**33368**

F 2. Status of Breedable Females at Different Field Unit Centres during 2021-2022

Centres/ Village	Heifers > 3 years		Buffalo	
	Total	Pregnant	In Milk	Dry
Shedhaya	44		0	0
Pipali	123		21	61
Loej	1042		93	293
Surva	145		12	25
Movana	0		8	16
Mand likpur	108		21	65
Hadmdiya	76		6	13
Sherdi	0		5	11
Khorasa	108		0	0
Odadar	434		2	28
Total	2080		168	512

F 3. Monthly AI at Different Field Unit Centres during Period 4/2021 to 3/2022

Month	TOTAL									
	Shedhaya	Pipali	Hadmadiya	Loej	Surva	Mandlikpur	Odadar	Khorasa	Gondal	Total
April, 21	1	24	8	17	18	7	27	7	4	113
May	0	13	5	0	12	6	10	5	3	54
June	2	14	6	43	11	0	21	7	2	106
July	4	14	5	38	13	13	24	8	3	122
August	2	28	6	44	9	48	23	10	4	174
September	0	14	8	51	13	30	43	12	2	173
October	9	28	8	47	18	40	48	10	6	214
November	0	15	6	32	15	69	27	10	4	178
December	9	28	5	68	28	44	28	14	4	228
January, 22	4	15	9	66	28	56	28	13	4	223
February	6	14	7	57	27	31	24	10	3	179
March	6	13	7	55	17	20	31	13	5	167
TOTAL	**43**	**220**	**80**	**518**	**209**	**364**	**334**	**119**	**44**	**1931**

F 4. Bull-wise AI at Different Field Unit Centres during the Period 4/2021 to 3/2022

Months	Nayak	Sango	Hamir	Total
April, 21	0	113	0	113
May	0	54	0	54
June	0	106	0	106
July	0	122	0	122
August	44	130	0	174
September	158	15	0	173
October	214	0	0	214
November	178	0	0	178
December	228	0	0	228
January, 22	223	0	0	223
February	179	0	0	179
March	130	0	37	167
Total	**1354**	**540**	**37**	**1931**

F 5. Month wise Conception at Different Field Unit Centres during the Period 4/2021 to 3/2022

Month	Village / Centre									
	Shedhaya		Pipali		Hadmadiya		Loej		Surva	
	P	E	P	E	P	E	P	E	P	E
April, 21	4	4	7	7	4	2	30	30	13	11
May	3	1	6	7	5	3	28	31	18	13
June	2	1	6	6	4	4	25	26	12	09
July	1	0	12	12	4	4	08	09	09	09
August	0	0	7	6	3	2	00	00	06	06
September	1	1	6	8	4	2	22	21	06	05
October	3	1	7	7	3	2	15	23	07	06
November	2	0	13	15	4	2	18	26	05	04
December	0	0	7	7	5	3	22	29	07	06
January, 22	5	4	13	15	5	3	20	27	10	08
February	0	0	7	8	4	2	16	16	07	08
March	5	4	14	14	3	2	31	37	14	14
Total	**26**	**16**	**105**	**112**	**48**	**31**	**235**	**275**	**114**	**99**

Cont..

Month	Village / Centre									
	Mandlikpur		Odadar		Khorasa		Gondal		Total	
	P	E	P	E	P	E	P	E	P	E
April, 21	6	9	21	50	3	6	3	3	91	122
May	4	7	11	30	4	7	2	3	81	102
June	4	6	10	22	4	6	2	3	69	83
July	4	3	9	18	3	4	3	1	53	60
August	1	5	4	6	2	3	2	1	25	29
September	0	0	8	13	3	4	1	1	51	55
October	6	7	7	17	3	5	1	2	52	70
November	19	29	7	16	4	6	2	2	74	100
December	13	17	13	30	4	8	0	2	71	102
January,22	17	23	13	35	4	6	3	3	90	124
February	35	34	9	18	4	6	2	2	84	94
March	18	26	9	19	6	8	1	3	101	127
Total	127	166	121	274	44	69	22	26	842	1068

F 6. Month wise Calving at Different Field Unit Centres during the Period 4/2021 to 3/2022

Month	Village / Centre											
	Pipali		Hadmadiya		Loej		Surva		Mandlikpur		Odadar	
	M	F	M	F	M	F	M	F	M	F	M	F
April, 21	4	2	1	3	6	8	1	2	3	1	4	5
May	4	3	1	3	11	7	1	2	3	2	6	6
June	4	3	2	2	15	10	3	2	4	3	4	4
July	4	2	2	1	14	10	6	5	2	1	6	7
August	4	3	1	3	11	5	7	7	7	2	5	4
September	5	3	1	2	15	10	5	4	5	3	5	3
October	7	4	2	2	19	11	4	6	3	2	11	7
November	4	3	1	3	13	16	6	6	2	2	14	6
December	3	3	2	3	13	15	6	5	2	0	5	3
January 22	3	3	1	3	9	14	6	5	1	1	4	5
February	7	5	1	3	3	4	5	3	2	0	4	5
March	3	4	1	2	0	0	3	3	1	0	3	1
Total	52	38	16	30	129	110	53	50	35	17	71	56

Conti...

Month	Village / Centre						**Total**	
	Shedhaya		**Khorasa**		**Gondal**			
	M	F	M	F	M	F	**M**	**F**
April, 21	0	0	2	2	2	0	23	23
May	2	0	2	2	1	0	31	25
June	3	2	2	2	1	0	38	28
July	4	1	3	3	0	0	41	30
August	3	2	2	2	2	1	42	29
September	4	2	3	2	2	2	45	31
October	3	2	2	2	2	0	53	36
November	2	2	2	1	1	2	45	41
December	1	2	2	2	1	1	35	34
January,22	1	0	2	2	2	0	29	33
February	0	1	2	1	2	1	26	23
March	0	0	1	1	2	0	14	11
Total	**23**	**14**	**25**	**22**	**18**	**7**	**422**	**344**

M= Male F= Female

F 7. Bull-wise Conception at Different Field Unit Centres during the Period 4/2021 to 3/2022

Month	**Bull No**								**Total**	
	Sango		**Balo**		**Nayak**		**Mayur**			
	P	**E**	**P**	**E**	**P**	**E**	**E**	**P**	**E**	**P**
April, 21	0	0	3	3	0	0	88	119	91	122
May	31	62	0	0	0	0	50	40	81	102
June	53	66	0	0	0	0	16	17	69	83
July	53	60	0	0	0	0	0	0	53	60
August	25	29	0	0	0	0	0	0	25	29
September	51	55	0	0	0	0	0	0	51	55
October	52	70	0	0	0	0	0	0	52	70
November	55	75	0	0	19	25	0	0	74	100

December	20	38	0	0	51	64	0	0	71	102
January, 22	0	0	0	0	90	124	0	0	90	124
February	0	0	0	0	84	94	0	0	84	94
March	0	0	0	0	101	127	0	0	101	127
Total	**340**	**455**	**3**	**3**	**345**	**434**	**154**	**176**	**842**	**1068**

F 8. Bull-wise Calving at Different Field Unit Centres during the Period 4/2021 to 3/2022

Month	**Bull Name**						**Total**	
	Balo		**Mayur**		**Sango**			
	M	F	M	F	M	F	M	F
April, 21	23	23	0	0	0	0	23	23
May	31	25	0	0	0	0	31	25
June	38	28	0	0	0	0	38	28
July	34	26	7	4	0	0	41	30
August	27	16	15	13	0	0	42	29
September	9	8	36	23	0	0	45	31
October	6	6	47	30	0	0	53	36
November	1	2	44	39	0	0	45	41
December	0	0	20	21	15	13	35	34
January,22	0	0	1	0	28	33	29	33
February	0	0	0	0	26	23	26	23
March	0	0	0	0	14	11	14	11
Total	169	134	170	130	83	80	422	344

F 9. Bull-wise Live Female Progeny at Different Field Unit Centres (0-6 month) as on 3/2022

Centres	**Mayur**	**Balo**	**Sango**	**Total**
Shedhaya	6		1	7
Pipali	10		12	22
Hadmdiya	8		8	16
Loej	35		25	60
Surva	11	6	11	28
Mandlimpur	4		1	5
Odadar	13		14	27
Khorasa	3		6	9
Gonadal	0	2	2	4
Total	**90**	**8**	**80**	**178**

F 10. Bull-wise Live Female Progeny at Different Field Unit Centres (6-12 month) as on 3/2022

Centres	**Mayur**	**Balo**	**Total**
Shedhaya	5	2	**7**
Pipali	6	10	**16**
Hadmdiya	3	11	**14**
Loej	11	39	**50**
Surva	0	22	**22**
Mandlimpur	3	9	**12**
Odadar	5	24	**29**
Khorasa	7	6	**13**
Gonadal	0	3	**3**
Total	**40**	**126**	**166**

F 11. Bull-wise Live Female Progeny at Different Field Unit Centres (1-3 years) as on 3/2022

Centres	Hamir	Balo	Kamlesh	Alok	Badal	Babar	Chaman	Raghu	Total
Shedhaya	8	0	0	6	3	0	0	0	**17**
Pipali	25	6	16	10	21	10	12	10	**110**
Hadmdiya	24	3	7	4	16	5	7	8	**74**
Loej	103	12	33	25	38	45	0	63	**319**
Surva	25	12	21	12	19	0	33	0	**122**
Mandlimpur	40	10	28	9	25	18	11	23	**164**
Odadar	21	6	11	0	23	0	15	33	**109**
Khorasa	13	4	10	0	12	12	6	11	**68**
Gonadal	7	0	12	4	2	1	6	7	**39**
Total	**266**	**53**	**138**	**70**	**159**	**91**	**90**	**155**	**1022**

F 12. Bull-wise Live Female Progeny at Different Field Unit Centres (> 3years) as on 3/2022

Centres	Bhagro	Laxman	Nagraj	Total
Set - I				
Harmadiya	0	0	0	**0**
Khorasa	0	0	0	**0**
Loej	69	190	53	**312**
Mandlikpur	0	0	0	**0**
Odadar	0	0	0	**0**
Pipali	0	0	0	**0**
Shedhaya	0	0	0	**0**
Surva	0	0	0	**0**
Total	**69**	**190**	**53**	**312**

Set – II	Haresh	Moti	Sundar	Raja	Dhingalo	Bholenath	Total
Harmadiya	0	0	0	0	0	0	**0**
Khorasa	0	0	0	0	0	0	**0**
Loej	49	19	36	84	34	193	**415**
Mandlikpur	0	0	0	0	0	0	**0**
Odadar	23	0	0	54	29	0	**106**
Pipali	0	0	0	0	0	0	**0**
Shedhaya	0	0	0	0	0	0	**0**
Surva	0	0	0	25	0	0	**25**
Total	**72**	**19**	**36**	**163**	**63**	**193**	**546**

Set - III	Ronak	Alok	Girish	Babar	Chaman	Raghu	Nayan	Madhav	Abhijit	Total
Hadmdiya	16	9	10	4	9	9	13	3	3	**76**
Khorasa	15	7	18	17	8	13	16	7	7	**108**
Loej	42	27	48	63	0	66	29	18	22	**315**
Mandlimpur	14	5	20	7	15	31	9	6	1	**108**
Odadar	63	24	54	27	32	40	50	15	23	**328**
Pipali	19	8	15	11	15	19	14	17	5	**123**
Shedhaya	15	3	4	0	0	0	14	0	8	**44**
Surva	35	11	12	6	31	7	0	10	8	**120**
Total	**219**	**94**	**181**	**135**	**110**	**185**	**145**	**76**	**77**	**1222**

F 13. Bull-wise AI, Conception, Calving and Daughters Retained Till Completion of Milk Recording during the Year

S.N.	CENTRE	VILLAGE	OWNER NAME	DAUGHTER TAG NO.	DATE OF BIRTH	SIRE NAME	SET	D.O.C	AFC	AV. M.P.	D.O.D.
1	Loej	Mankhetra	Vanaraj uka	4216	15/06/2009	Bhagaro	I	08/11/2014	64.8	8.2	15/08/2015
2	Loej	Rahij	Natha uka	13066	12/07/2009	Bhagaro	I	27/05/2013	46.5	8.9	08/05/2014
3	Loej	Atroli	Ram kara	7437	10/08/2010	Bhagaro	I	06/08/2015	59.9	6.6	30/06/2016
4	Loej	Nagichana	Bhaya parabat	13002	24/08/2010	Bhagaro	I	28/11/2014	51.2	10.0	30/06/2015
5	Loej	Gorej	Virabhan jina	249	14/09/2010	Bhagaro	I	08/08/2014	46.8	8.0	05/06/2015
6	Mandlikpur	Khadiya	Bhima kala	A087	29/11/2011	Bhagaro	I	17/08/2015	44.6	12.8	19/06/2016
7	Mandlikpur	Pratappur	Kamlesh bhanjibhai	1910	15/12/2011	Bhagaro	I	14/04/2016	52.0	7.7	14/02/2017
8	Mandlikpur	Choravadi	Dhiru devraj sorathiya	2383	05/03/2012	Bhagaro	I	13/05/2016	50.3	8.0	14/03/2017
9	Mandlikpur	Nagalpur	Haka chagan harkani	2394	29/03/2012	Bhagaro	I	12/08/2016	52.5	8.0	10/06/2018
10	Mandlikpur	Toraniya	Naran parbat tilva	9629	17/04/2012	Bhagaro	I	20/08/2016	52.1	6.5	14/07/2017
11	Mandlikpur	Anandpur	Khima vagman	A936	22/05/2012	Bhagaro	I	15/04/2016	46.8	9.5	15/02/2017
12	Mandlikpur	Virpur	Vitthal ranchod vora	1935	27/06/2012	Bhagaro	I	13/09/2016	50.6	11.9	15/07/2018
13	Mandlikpur	Choravadi	Arvind gordhan	1913	18/10/2012	Bhagaro	I	24/11/2016	49.2	11.4	24/09/2017
14	Mandlikpur	Bandhala	Bala nanji	10781	10/03/2010	Bhagaro	I	25/04/2015	61.5	11.6	01/04/2016
15	Mandlikpur	Etala	Bhagvan hardashbhai	A917	08/09/2010	Bhagaro	I	26/07/2015	58.6	6.1	23/06/2016
16	Mandlikpur	Anatha	Bhikha lakhabhai	12850	12/11/2010	Bhagaro	I	10/10/2015	58.9	9.1	11/09/2016
17	Mandlikpur	Chorvadi	Budhdhabhai vallabhabhai	953	30/07/2011	Bhagaro	I	27/10/2015	51.0	9.9	06/09/2016
18	Mandlikpur	Bilkha	Natunatha virani	10757	22/12/2010	Bhagaro	I	10/10/2015	57.6	9.1	18/09/2016
19	Mandlikpur	Torniya	Bhagvanji khimji	1931	27/01/2011	Bhagaro	I	26/06/2015	53.0	9.6	10/06/2016
20	Mandlikpur	Anadpur	Jaman uka dobariya	12861	25/02/2011	Bhagaro	I	15/10/2015	55.7	9.7	15/09/2016
21	Mandlikpur	Mevasa	Rasikbhai gordhanbhai	12829	15/04/2011	Bhagaro	I	05/11/2015	54.7	8.8	08/10/2016
22	Mandlikpur	Chorvadi	Govindbhai haribhai kotadiya	966	20/04/2011	Bhagaro	I	16/11/2016	67.0	8.4	16/10/2017
23	Mandlikpur	Itala	Jetha karsanbhai	12838	22/06/2011	Bhagaro	I	22/11/2015	53.1	10.1	10/10/2016
24	Mandlikpur	Naglpur	Harsukhbhai dayabhai	1970	20/07/2011	Bhagaro	I	15/08/2016	60.9	8.0	14/07/2017
25	Sherdi	Velava	Madhavji parbat viroja	10615	20/11/2011	Bhagaro	I	05/08/2015	44.5	11.0	12/07/2016
26	Sherdi	Manavadar	Gokar uka dedivadiya	10617	27/11/2011	Bhagaro	I	24/09/2015	45.9	9.3	04/09/2016
27	Sherdi	Sheradi	Kara karshan	10618	30/11/2011	Bhagaro	I	28/09/2015	46.0	9.9	03/09/2016
28	Sherdi	Vekri	Ajit velji karavadiya	10620	12/04/2011	Bhagaro	I	06/07/2015	50.8	9.7	12/07/2016
29	Sherdi	Buri	Ravji hira suraja	10623	12/10/2011	Bhagaro	I	13/09/2015	47.1	10.9	03/09/2016
30	Sherdi	Ronki	Kantilal mavaji	10626	16/12/2011	Bhagaro	I	11/08/2015	43.9	9.8	13/07/2016
31	Sherdi	Jilana	Pravin lalji mendapara	1591	26/12/2011	Bhagaro	I	12/10/2015	45.6	9.0	18/10/2016
32	Sherdi	Limbuda	Manshukh natha sureja	10640	15/01/2012	Bhagaro	I	12/12/2015	46.9	9.7	02/11/2016
33	Sherdi	Buri	Kana puna	10651	18/02/2012	Bhagaro	I	03/02/2016	47.5	9.3	03/02/2017
34	Sherdi	Sheradi	Jetha kana mori	10654	27/02/2012	Bhagaro	I	19/02/2016	47.8	10.1	28/01/2017
35	Sherdi	Ranki	Ravjidaya r.	10658	13/03/2012	Bhagaro	I	24/03/2016	48.4	8.7	19/03/2017
36	Harmadiya	Morvad	Govind bhai chandera	9696	26/08/2010	Bhagaro	I	10/09/2015	60.5	7.6	17/07/2016
37	Harmadiya	Alidar	Mayurbhai gohil	9686	10/12/2010	Bhagaro	I	02/07/2015	54.7	6.8	19/06/2016
38	Harmadiya	Alidar	Nirmitbhai bhagatbhai	9603	17/11/2011	Bhagaro	I	27/09/2015	46.4	7.8	12/07/2016
39	Harmadiya	Harmadiya	Bharatbhai khasiya	A582	10/12/2011	Bhagaro	I	03/08/2015	43.8	12.3	20/07/2016
40	Pipali	Echad	Meansibhai danabhai	9458	04/02/2010	Bhagaro	I	21/02/2015	60.6	9.4	15/12/2015
41	Pipali	Dudana	Kumarbhai rathod	9457	27/02/2010	Bhagaro	I	08/03/2015	60.3	8.6	26/12/2015
42	Pipali	Ronaj	Devsibhai ravliya	9456	18/04/2010	Bhagaro	I	28/03/2015	59.3	9.2	15/02/2016
43	Pipali	Arnej	Arjanbhai dhirubhai	9452	11/06/2010	Bhagaro	I	19/04/2015	58.3	9.2	30/01/2016
44	Pipali	Sonpara	Kanabhai dodiya	9451	18/07/2010	Bhagaro	I	03/05/2015	57.5	8.7	20/02/2016
45	Pipali	Rajpara	Mansinhbhai chavada	9453	06/05/2010	Bhagaro	I	10/04/2015	59.2	8.3	21/02/2016
46	Loej	Nagichana	Haradash parabat	366	05/10/2010	Laxman	I	24/08/2016	70.7	10.2	30/06/2017
47	Loej	Divasa	Mohan kumbha	4234	05/10/2010	Laxman	I	23/08/2015	58.6	9.3	29/03/2016
48	Loej	Nagichana	Haradash parabat	7264	27/10/2010	Laxman	I	14/02/2017	75.7	9.4	15/12/2017
49	Loej	Divasa	Mohan mula	7416	10/11/2010	Laxman	I	22/01/2017	74.5	8.9	30/11/2017
50	Loej	Rahij	Somat meraman	A-344	19/11/2010	Laxman	I	20/09/2016	70.1	9.5	28/07/2017
51	Loej	Kankasha	Devanand masari	375	13/11/2010	Laxman	I	07/08/2016	68.8	9.0	02/03/2017
52	Loej	Sangavada	Raju hira	5712	04/12/2010	Laxman	I	14/12/2016	72.4	9.8	18/10/2017
53	Loej	Rahij	Ram veja	351	07/12/2010	Laxman	I	16/11/2016	71.4	7.5	16/11/2016
54	Loej	Nagichana	Arajan vajasi	896	12/12/2010	Laxman	I	10/03/2017	75.0	9.2	09/02/2018
55	Loej	Rahij	Bhaya meraman	592	02/09/2011	Laxman	I	03/09/2017	72.1	9.4	23/07/2018
56	Loej	Loej	Kishor rana	4240	15/02/2011	Laxman	I	11/12/2015	57.9	8.8	16/07/2016
57	Loej	Menej	Khumansih parabatji	13108	03/03/2011	Laxman	I	28/10/2015	55.9	8.8	30/06/2016
58	Loej	Manakhetra	Subhash karashan	7232	30/08/2011	Laxman	I	17/10/2015	49.6	9.1	12/12/2016
59	Loej	Nagichana	Vajasi bhoja	1912	25/08/2011	Laxman	I	23/05/2017	69.0	9.7	09/06/2018
60	Loej	Bamanavada	Arajan natha	372	08/09/2011	Laxman	I	09/02/2017	65.1	9.9	06/02/2018
61	Loej	Manakhetra	Jagadish kachela	1753	13/09/2011	Laxman	I	17/01/2017	64.2	8.4	28/10/2017
62	Loej	Bamanavada	Govind kesur	394	11/10/2011	Laxman	I	29/07/2016	57.6	8.5	01/03/2017
63	Loej	Loej	Laxaman rana	5842	10/10/2011	Laxman	I	08/11/2015	49.0	8.6	15/08/2016
64	Loej	Loej	Naran somat	6697	22/10/2011	Laxman	I	28/05/2016	55.2	8.0	16/05/2017
65	Loej	Kankasha	Bachu oghad	7457	06/10/2011	Laxman	I	20/01/2017	63.6	10.0	29/12/2017
66	Loej	Nagichana	Vanu varajang	354	04/10/2011	Laxman	I	30/08/2016	58.9	8.9	30/04/2017
67	Loej	Nagichana	Ala kana	A-2384	15/10/2011	Laxman	I	02/09/2017	70.7	10.1	30/06/2018
68	Loej	Bamanavada	Mulu devarakhi	309	14/10/2011	Laxman	I	20/12/2015	50.2	9.4	15/06/2016
69	Loej	Kankasha	Bhupat karashan	398	20/11/2011	Laxman	I	31/07/2016	56.4	8.4	13/06/2017
70	Loej	Kankasha	Uka malade	2220	12/11/2011	Laxman	I	30/06/2016	55.6	7.2	15/02/2017
71	Loej	Rahij	Manda menasi	283	10/01/2013	Laxman	I	03/03/2017	49.7	8.8	08/01/2018
72	Loej	Nagichana	Arajan bhimasi	7273	13/01/2012	Laxman	I	16/04/2016	51.1	12.0	13/03/2017
73	Loej	Mangrol	Bhavesh karashan	5763	15/02/2012	Laxman	I	03/12/2017	69.6	9.1	12/12/2018
74	Loej	Zariyavada	Rana deva	1791	25/02/2012	Laxman	I	18/01/2017	58.8	7.9	29/10/2017
75	Loej	Loej	Vejanand devasi	1928	28/03/2012	Laxman	I	05/06/2017	62.3	11.3	23/06/2018
76	Loej	Kankasha	Govind karashan	5707	05/04/2012	Laxman	I	23/02/2017	58.7	8.5	31/12/2017
77	Loej	Nagichana	Haradash parabat	7425	22/04/2012	Laxman	I	03/10/2016	53.4	8.4	25/08/2017
78	Loej	Makatupur	Samat karamata	242	23/04/2012	Laxman	I	25/08/2016	52.1	8.5	25/06/2017
79	Loej	Kankasha	Arajan govind	392	14/05/2012	Laxman	I	20/11/2016	54.3	8.5	26/10/2017
80	Loej	Rahij	Naga vira	7446	11/05/2012	Laxman	I	30/04/2016	47.7	7.1	30/01/2017
81	Loej	Nagichana	Punja vira	326	15/05/2012	Laxman	I	14/10/2016	53.0	8.2	13/08/2017

82	Loej	Sangavada	Bachu deva	5767	22/05/2012	Laxman	I	13/11/2017	65.8	9.9	17/08/2018
83	Loej	Rahij	Devasi arasi	317	28/05/2012	Laxman	I	04/01/2017	55.3	7.3	29/10/2017
84	Loej	Bamanavada	Meraman kesur	389	19/06/2012	Laxman	I	09/07/2016	48.7	8.3	15/02/2017
85	Loej	Mankhetra	Ramasing bhama	5779	08/07/2012	Laxman	I	23/09/2017	62.6	10.2	03/09/2018
86	Loej	Kankasha	Jadav masari	2244	09/08/2012	Laxman	I	29/10/2016	50.7	7.4	29/08/2017
87	Loej	Rahij	Natha uka	897	02/09/2012	Laxman	I	13/02/2018	65.4	9.3	14/12/2018
88	Loej	Nagichana	Haja kaba	2278	16/09/2012	Laxman	I	23/06/2017	57.2	10.1	08/07/2018
89	Loej	Menej	Sanjay kanaji	295	08/10/2012	Laxman	I	28/09/2016	47.7	10.4	09/09/2017
90	Loej	Rahij	Arajan laxaman	2228	12/11/2012	Laxman	I	15/07/2016	44.1	8.6	14/02/2017
91	Loej	Kankasha	Saraman vajasi	3105	28/11/2012	Laxman	I	18/12/2016	48.7	9.8	15/07/2017
92	Loej	Nagichana	Hamir raja	289	16/09/2013	Laxman	I	09/11/2017	49.8	9.6	15/09/2018
93	Loej	Bamanavada	Arasi haja	285	20/09/2013	Laxman	I	10/03/2018	53.7	8.7	16/01/2019
94	Loej	Nagichana	Kara kana	383	28/09/2013	Laxman	I	03/01/2018	51.2	8.8	10/09/2018
95	Loej	Mankhetra	Karashan amara	3108	10/10/2013	Laxman	I	09/11/2017	49.0	9.3	15/09/2018
96	Loej	Mankhetra	Vijay punja	287	09/10/2013	Laxman	I	08/12/2017	50.0	9.2	07/10/2018
97	Mandlikpur	Nani monpari	Pravin deversy	10782	19/07/2012	Laxman	I	23/10/2016	51.2	9.8	25/08/2017
98	Mandlikpur	Bandhala	Dhiru ramani	2395	29/07/2012	Laxman	I	15/11/2016	51.6	9.6	16/09/2017
99	Mandlikpur	Choravadi	Dhiru satasiyta	A873	21/08/2012	Laxman	I	05/09/2016	48.5	9.8	15/07/2017
100	Mandlikpur	Nava pipliya	Jashsukh haribhai	2387	25/09/2012	Laxman	I	13/11/2016	49.6	10.2	15/09/2017
101	Mandlikpur	Bilkha	Dhrmendar aanad tilva	10729	01/10/2012	Laxman	I	26/01/2018	63.9	8.6	26/11/2018
102	Mandlikpur	Khadiya	Malde govind	2345	14/10/2012	Laxman	I	10/12/2016	49.9	8.3	12/10/2017
103	Surva	Mathasutiya	Vasing kana	A-12637	29/07/2012	Laxman	I	05/04/2016	44.3	8.5	05/02/2017
104	Surva	Khandheri	Denesh raja	3410	01/08/2012	Laxman	I	22/09/2017	61.7	8.7	20/07/2018
105	Surva	Khandheri	Dana arshi	4211	20/08/2012	Laxman	I	18/05/2017	56.9	10.6	18/03/2018
106	Surva	Amblas	Pravin padaliya	4282	28/08/2012	Laxman	I	25/06/2017	57.9	17.5	25/04/2018
107	Harmadiya	Aalidar	Kanabhai zala	1222	25/03/2012	Laxman	I	16/10/2015	42.7	7.9	10/07/2016
108	Pipali	Kaj	Karsam dodiya	11805	18/06/2012	Laxman	I	08/04/2016	45.7	7.9	28/01/2017
109	Pipali	Moradiya	Bhana badai	11806	09/06/2012	Laxman	I	10/08/2016	50.1	6.1	03/05/2017
110	Pipali	Morvad	Natubhai vala	11817	24/10/2012	Laxman	I	14/06/2016	43.7	8.2	09/03/2017
111	Movana	Chandigadh	Bhikha ven koli	344	27/11/2011	Laxman	I	10/08/2015	44.4	17.5	15/06/2016
112	Movana	Madharvada	Badhubhai vala	A196	12/01/2012	Laxman	I	13/10/2014	33.0	12.6	15/08/2015
113	Movana	Chandigadh	Bhikha vela	10109	16/04/2012	Laxman	I	26/04/2015	36.3	10.8	29/02/2016
114	Movana	Chandigadh	Pravin sidi	A343	22/04/2012	Laxman	I	12/04/2015	35.7	9.9	15/03/2016
115	Movana	Chandigadh	Ranmal ramde naya mer	A138	14/07/2012	Laxman	I	11/11/2015	39.9	10.5	10/09/2016
116	Movana	Mendrada	Mohan hirji kaneriya	A128	04/08/2012	Laxman	I	20/08/2016	48.6	9.7	10/06/2017
117	Movana	Keshod	Dhirubhai nana	A178	07/08/2012	Laxman	I	26/01/2016	41.7	8.3	30/11/2016
118	Movana	Fagari	Bijal lakhman makvana	A346	18/09/2012	Laxman	I	20/03/2016	42.0	9.6	20/01/2017
119	Movana	Agatray	Parabat mulubhai	A119	01/11/2012	Laxman	I	15/05/2016	42.4	10.7	15/03/2017
120	Movana	Keshod	Naga prabat	A117	24/11/2012	Laxman	I	14/07/2016	43.7	6.1	15/05/2017
121	Loej	Bamanavada	Naran kara	2588	22/09/2011	Laxman	I	18/10/2015	48.9	9.6	20/07/2016
122	Loej	Loej	Ram marakhi	263	31/10/2012	Laxman	I	02/08/2016	45.1	8.5	30/05/2017
123	Loej	Bamanavada	Ram devasi	4214	23/10/2012	Laxman	I	15/05/2017	54.7	9.2	15/03/2018
124	Harmadiya	Morvad	Govindbhai chandish	B2668	30/04/2012	Laxman	I	12/06/2018	73.4	8.3	02/01/2019
125	Loej	Sangavada	Vijaydas mohandas	665	25/09/2012	Laxman	I	09/12/2017	62.5	9.9	12/10/2018
126	Loej	Bamanavada	Lakha devarakhi	2250	19/02/2012	Laxman	I	18/06/2017	64.0	9.2	25/04/2018
127	Loej	Loej	Bhima arasi	1779	30/10/2012	Laxman	I	30/01/2017	51.1	8.8	30/11/2017
128	Loej	Bamanavada	Govind kesur	7295	08/10/2013	Laxman	I	30/09/2019	71.8	9.1	30/06/2020
129	Loej	Loej	Kara govind	1584	21/02/2011	Laxman	I	08/05/2016	62.6	9.3	10/03/2017
130	Loej	Menej	Sanjay kanaji	A-295	09/10/2012	Laxman	I	07/09/2020	95.0	11.8	10/07/2021
131	Loej	Mankhetra	Pithabhai mori	4213	10/08/2013	Nagraj	I	01/05/2017	44.7	9.0	27/02/2018
132	Loej	Nagichana	Ram naga	1784	17/08/2013	Nagraj	I	20/01/2017	41.2	8.6	20/12/2017
133	Loej	Mankhetra	Subhash keshar	5743	27/08/2013	Nagraj	I	03/02/2017	41.3	11.1	08/12/2017
134	Loej	Ateoli	Visa laxaman	7451	08/09/2013	Nagraj	I	25/12/2016	39.6	8.2	29/10/2017
135	Loej	Kankasha	Hamir raja	2298	30/10/2013	Nagraj	I	02/10/2016	35.1	9.2	19/08/2017
136	Loej	Rahij	Viram kesar	1781	20/11/2013	Nagraj	I	12/02/2017	38.8	9.3	15/12/2017
137	Loej	Nagichana	Bhaya parabat	246	24/11/2013	Nagraj	I	06/01/2018	49.4	10.6	17/10/2018
138	Loej	Sangavada	Vijay bapu	5764	22/11/2013	Nagraj	I	08/12/2017	48.6	10.0	13/12/2018
139	Movana	Fagri	Bhana natha	A732	01/10/2013	Nagraj	I	18/08/2016	34.6	10.8	30/05/2017
140	Mandlikpur	Mandalikpur	Jivaraj gokal	B3318	02/01/2014	Nagraj	I	06/05/2018	52.1	7.7	07/03/2019
141	Harmadiya	Alidar	Parmar jagdish	B2938	27/03/2014	Nagraj	I	14/05/2018	49.6	7.0	23/03/2019
142	Surva	Gundarada	Natha uka	11470	28/11/2013	Nagraj	I	22/03/2017	39.8	8.9	22/01/2018
143	Loej	Divasa	Ramesh raja	312	09/01/2014	Nagraj	I	08/02/2018	49.0	8.5	15/12/2018
144	Loej	Kankasha	Bhikhan vala	251	25/01/2014	Nagraj	I	10/04/2018	50.5	8.5	10/04/2018
145	Loej	Loej	Ram karashan	254	05/01/2013	Nagraj	I	03/01/2018	60.0	9.3	30/10/2018
146	Loej	Menej	Khumansih parabatji	258	04/02/2014	Nagraj	I	12/03/2018	49.2	9.2	15/01/2019
147	Loej	Farangata	Naran vajasi	4043	14/09/2013	Nagraj	I	27/05/2018	56.4	9.4	28/03/2019
148	Loej	Kankasha	Bhikhubha jalubha	6698	20/10/2013	Nagraj	I	03/04/2018	53.5	8.6	30/01/2019
149	Pipali	Harmadiya	Navjit dobariya	B0151	21/01/2014	Nagraj	I	16/07/2018	53.8	16.0	27/04/2019
150	Pipali	Mitiyaj	Bharat chohan	A2155	06/02/2014	Nagraj	I	08/04/2018	50.0	7.4	24/02/2019
151	Pipali	Eravad	Devasi kambliya	A2156	07/03/2014	Nagraj	I	05/09/2017	42.0	7.1	26/08/2018
152	Pipali	Lodhava	Gopal bhima	A2158	02/04/2014	Nagraj	I	05/08/2017	40.1	6.7	22/06/2018
153	Pipali	Pipli	Pravinbhai chohan	A2178	24/12/2013	Nagraj	I	07/12/2017	47.5	7.2	18/10/2018
154	Mandlikpur	Bandhala	Bhagvan ravji	10741	15/06/2014	Nagraj	I	12/08/2018	49.9	8.5	11/06/2019
155	Loej	Kankasha	Naga arjan	7212	19/04/2014	Nagraj	I	15/07/2018	50.9	9.3	15/05/2019
156	Harmadiya	Alidar	Gohil bhagavanbhai	B2662	05/12/2013	Nagraj	I	25/06/2018	54.7	5.9	13/05/2019
157	Loej	Nagichana	Ramesh veja	1800	18/12/2013	Nagraj	I	03/09/2018	56.5	10.2	30/06/2019
158	Loej	Chandavana	Deva govind	1930	11/04/2014	Nagraj	I	10/09/2018	53.0	9.6	16/07/2019
159	Loej	Mangrol	Musa mamad	234	23/03/2014	Nagraj	I	05/06/2018	50.5	10.1	07/04/2019
160	Loej	Loej	Araja naran	239	20/03/2014	Nagraj	I	03/09/2018	53.5	9.2	30/06/2019
161	Loej	Mankhetra	Rama dhana	2273	08/11/2013	Nagraj	I	11/10/2018	59.1	10.3	14/08/2019
162	Loej	Kankasha	Naga arajan	7484	26/02/2014	Nagraj	I	03/11/2018	56.3	8.9	30/08/2019
163	Loej	Menej	Ramasi nandaniya	2300	10/03/2014	Nagraj	I	13/11/2018	56.2	10.2	15/09/2019
164	Loej	Rahij	Parabat veja	203	22/10/2013	Nagraj	I	22/10/2017	48.0	8.9	31/08/2018
165	Loej	Madhavpur	Jiva mitha	233	08/02/2014	Nagraj	I	13/03/2018	49.1	10.4	17/01/2019
166	Loej	Loej	Devasi menasi	2321	22/07/2014	Nagraj	I	12/03/2019	55.7	9.8	14/01/2020
167	Loej	Kankasha	Rana sajan	2279	05/09/2013	Nagraj	I	22/03/2017	42.5	10.3	26/01/2018

168	Loej	Kankasha	Govind haradas	209	22/06/2014	Nagraj	I	10/08/2018	49.6	9.7	15/06/2019
169	Surva	Gundarada	Naran bera	13927	07/05/2014	Nagraj	I	15/08/2018	51.3	6.6	15/06/2019
170	Surva	Rampara	Ashokbhai	13933	10/06/2014	Nagraj	I	20/09/2018	51.4	9.6	20/07/2019
171	Loej	Shil	Dipak chana	7433	14/06/2014	Nagraj	I	05/09/2019	62.8	9.1	13/07/2020
172	Loej	Loej	Bhima arasi	284	09/01/2014	Nagraj	I	12/10/2019	69.1	10.7	14/08/2020
173	Loej	Sangavada	Kana uka	288	05/04/2014	Nagraj	I	17/10/2019	66.4	10.0	15/08/2020
174	Pipali	Kaj	Meru pasar	293	30/12/2013	Nagraj	I	04/07/2019	66.1	6.5	03/06/2020
175	Loej	Bamanavada	Arajan bhimasi	1705	15/10/2014	Bholenath	II	10/02/2018	39.9	11.8	15/12/2018
176	Pipali	Velava	Girish vala	151	07/07/2014	Bholenath	II	16/11/2017	40.4	7.2	22/09/2018
177	Pipali	Rakhej	Dipu parbat	164	13/08/2014	Bholenath	II	03/11/2017	38.7	6.3	20/08/2018
178	Pipali	Kanajdi	Kalu parmar	188	23/08/2014	Bholenath	II	13/10/2017	37.7	7.0	28/07/2018
179	Pipali	Kaj	Zala subhash	111	18/12/2014	Bholenath	II	27/01/2018	37.3	7.3	24/11/2018
180	Pipali	Panadar	Ram bhai	117	19/02/2015	Bholenath	II	16/12/2017	33.9	9.1	20/10/2018
181	Surva	Surva	Raju ganda	671	22/12/2014	Bholenath	II	15/06/2018	41.8	7.5	30/03/2019
182	Loej	Mankhetra	Kana khima	13320	09/12/2014	Bholenath	II	02/06/2018	41.8	9.0	15/03/2019
183	Pipali	Pipli	Gohil raghu	115/11992	28/01/2015	Bholenath	II	09/06/2018	40.4	7.8	06/04/2019
184	Pipali	Khera	Balvant kher	144	18/07/2014	Bholenath	II	05/05/2018	45.6	6.2	23/02/2019
185	Pipali	Sompara	Rashing mori	155	12/07/2014	Bholenath	II	04/03/2018	43.8	7.2	22/01/2019
186	Pipali	Velava	Vadhel arjan bhai	136	14/10/2014	Bholenath	II	12/04/2018	42.0	7.2	10/02/2019
187	Pipali	Thoradi	Ikabal bhai	190/a2154	23/11/2014	Bholenath	II	05/06/2018	42.4	7.0	28/03/2019
188	Mandlikpur	Bilakha	Jenti ramji	12603	04/12/2014	Bholenath	II	12/08/2018	44.3	9.1	11/06/2019
189	Pipali	Ronaj	Parshotam bhai	181	13/09/2014	Bholenath	II	03/09/2018	47.7	6.2	10/07/2019
190	Pipali	Dolasa	Bhart bhai	105	29/08/2014	Bholenath	II	06/08/2018	47.3	5.4	21/06/2019
191	Pipali	Advi	Dodiya kana bhai	199	14/12/2014	Bholenath	II	18/07/2018	43.1	7.7	20/06/2019
192	Harmadiya	Moravad	Chndera lkakhan bhai	2668	11/08/2014	Bholenath	II	12/06/2018	46.1	8.1	15/01/2019
193	Loej	Nagichana	Bharat bhimasi	5742	28/08/2014	Bholenath	II	12/09/2018	48.5	8.1	14/07/2019
194	Loej	Menej	Khumansih parabatji	594	30/10/2014	Bholenath	II	02/09/2018	46.1	9.4	30/06/2019
195	Loej	Shil	Govind hama	13175	12/11/2014	Bholenath	II	08/09/2018	45.9	7.8	13/07/2019
196	Mandlikpur	Nagalpur	Popat vagashiya	3874/a5616	29/12/2014	Bholenath	II	02/10/2018	45.1	8.0	03/08/2019
197	Loej	Atroli	Ram kara	231	02/10/2014	Bholenath	II	03/11/2018	49.1	10.4	30/08/2019
198	Loej	Kankasha	Govind marakhi		03/09/2014	Bholenath	II	08/12/2018	51.2	15.0	10/10/2019
199	Loej	Rahij	Arajan laxaman	266	29/10/2014	Bholenath	II	03/10/2018	47.2	9.6	16/08/2019
200	Loej	Loej	Kishor rana	2285	16/10/2014	Bholenath	II	03/11/2018	48.6	8.7	07/09/2019
201	Loej	Rahij	Parabat natha	2288	08/06/2015	Bholenath	II	31/12/2018	42.8	9.4	30/10/2019
202	Loej	Nagichana	Haradash parabat	7466	29/09/2014	Bholenath	II	10/12/2018	50.4	11.1	17/10/2019
203	Pipali	Velva	Natha bhai	192	18/01/2015	Bholenath	II	02/11/2018	45.5	7.5	31/08/2019
204	Loej	Kankasha	Laxaman devasi	7279	09/09/2014	Bholenath	II	25/11/2018	50.6	10.7	30/09/2019
205	Loej	Divasa	Jina ramasi	666	29/10/2014	Bholenath	II	22/02/2019	51.8	9.0	27/12/2019
206	Loej	Rahij	Rama marasi	662	28/10/2014	Bholenath	II	02/01/2019	50.2	9.7	30/10/2019
207	Loej	Mankhetra	Pitha barad	670	24/10/2014	Bholenath	II	23/12/2018	50.0	10.1	26/10/2019
208	Loej	Rahij	Ram devasi	667	22/10/2014	Bholenath	II	02/03/2019	52.3	10.0	30/12/2019
209	Loej	Atroli	Visa laxaman	2292	26/10/2014	Bholenath	II	31/01/2019	51.2	11.1	30/10/2019
210	Loej	Mankhetra	Karashan naran	13392	11/12/2014	Bholenath	II	03/01/2019	48.8	10.0	07/11/2019
211	Loej	Kankasha	Vajasi malade	13124	19/11/2014	Bholenath	II	20/12/2018	49.1	9.6	23/10/2019
212	Loej	Maktupur	Veja marakhi	13196	25/11/2014	Bholenath	II	10/02/2019	50.6	9.4	13/12/2019
213	Loej	Mankhetra	Bharat bhama	13106	30/11/2014	Bholenath	II	03/02/2019	50.2	9.7	07/12/2019
214	Loej	Bamanavada	Bhimasi rana	13384	26/12/2014	Bholenath	II	01/04/2019	51.2	9.1	30/01/2020
215	Loej	Sangavada	Bachu babu	13182	11/11/2014	Bholenath	II	08/11/2018	47.9	9.4	18/09/2019
216	Loej	Atroli	Malade kana	13149	09/11/2014	Bholenath	II	27/12/2018	49.6	9.0	30/10/2019
217	Loej	Bamanavada	Jetha laxaman	13146	20/11/2014	Bholenath	II	08/11/2018	47.6	9.2	08/09/2019
218	Loej	Karej	Malade daya	13336	01/12/2014	Bholenath	II	16/03/2019	51.5	9.5	18/12/2019
219	Loej	Loej	Laxaman devat	13343	11/12/2014	Bholenath	II	03/01/2019	48.8	9.1	30/10/2019
220	Loej	Nagichana	Govind haradash	13368	23/12/2014	Bholenath	II	10/04/2019	51.6	9.8	11/02/2020
221	Loej	Bamanavada	Laxaman dosa	13244	21/10/2014	Bholenath	II	23/11/2018	49.1	9.8	31/08/2019
222	Loej	Kankasha	Arajan tapu	13170	02/12/2014	Bholenath	II	30/12/2018	49.0	7.8	30/10/2019
223	Loej	Rahij	Devasi veja	13305	08/12/2014	Bholenath	II	10/02/2019	50.1	9.2	15/12/2019
224	Loej	Sangavada	Jenti daya	13130	25/11/2014	Bholenath	II	09/02/2019	50.5	9.6	16/12/2019
225	Loej	Mankhetra	Bhikhu merag	13173	19/11/2014	Bholenath	II	27/12/2019	61.3	9.3	30/12/2019
226	Loej	Kankasha	Naran vira	13185	20/11/2014	Bholenath	II	13/01/2019	49.8	9.2	15/11/2019
227	Loej	Zariyavada	Manda daya	13314	26/12/2014	Bholenath	II	16/11/2018	46.7	8.3	16/09/2019
228	Loej	Loej	Jagamal mulu	13326	08/01/2015	Bholenath	II	10/02/2019	49.1	9.0	10/12/2019
229	Loej	Shil	Ramu jina	13400	01/01/2015	Bholenath	II	06/01/2019	48.2	9.6	07/11/2019
230	Loej	Bamanavada	Hamir malade	13346	26/12/2014	Bholenath	II	06/05/2019	52.3	9.2	20/02/2020
231	Loej	Nagichana	Haradash parabat	13330	02/01/2015	Bholenath	II	08/01/2019	48.2	8.5	15/11/2019
232	Loej	Atroli	Deva ala	13307	08/01/2015	Bholenath	II	30/12/2018	47.7	9.2	30/10/2019
233	Loej	Nagichana	Arajan masari	13195/3166	29/10/2014	Bholenath	II	10/05/2019	54.4	10.2	17/03/2020
234	Loej	Kankasha	Arajan karashan	13324	18/12/2014	Bholenath	II	15/06/2019	53.9	8.5	15/04/2020
235	Loej	Virol	Laxaman babu	13344	03/12/2014	Bholenath	II	06/07/2019	55.1	8.4	11/05/2020
236	Loej	Kankasha	Masari kara	202	29/04/2015	Bholenath	II	13/07/2019	50.5	9.4	16/05/2020
237	Loej	Bamanavada	Karashan rajasi	13359	15/12/2014	Bholenath	II	07/08/2019	55.8	9.1	10/06/2020
238	Loej	Bamanavada	Marakhi mulu	694	08/09/2014	Bholenath	II	03/04/2019	54.8	9.2	06/02/2020
239	Loej	Mankhetra	Uka naran	13363	13/12/2014	Bholenath	II	10/07/2019	54.9	7.9	11/05/2020
240	Mandlikpur	Mandalikpur	Mansukh hirji umatiya	12672/9648	13/11/2014	Bholenath	II	19/07/2019	56.2	9.2	16/05/2020
241	Loej	Mankhetra	Jagadish kachela	2225	25/09/2014	Bholenath	II	12/10/2019	60.6	9.3	15/08/2020
242	Loej	Nagichana	Punja vira	204	07/05/2015	Bholenath	II	03/11/2019	54.0	9.5	05/10/2020
243	Loej	Bamanavada	Ram veja	2223	14/06/2015	Bholenath	II	10/08/2019	49.9	10.5	10/06/2020
244	Pipali	Advi	Parmar vaju	138	08/11/2014	Bholenath	II	29/10/2019	59.7	6.2	20/09/2020
245	Pipali	Sompara	Karshan bhai	121	24/12/2014	Bholenath	II	16/08/2019	55.8	6.5	20/07/2020
246	Pipali	Harmadiya	Bharat bhai	145	18/12/2014	Bholenath	II	07/09/2019	56.7	7.3	17/07/2020
247	Loej	Mankhetra	Uka jiva	655	25/03/2015	Bholenath	II	07/02/2020	58.5	10.3	05/12/2020
248	Loej	Rahij	Vakamat laxaman	262	20/12/2014	Bholenath	II	15/01/2020	60.9	10.1	15/11/2020
249	Loej	Nagichana	Bharat bhimasi	13352	16/12/2014	Bholenath	II	08/10/2019	57.8	10.6	10/08/2020
250	Loej	Shil	Yogesh menasi	677110	11/06/2015	Bholenath	II	08/05/2020	58.9	9.9	09/02/2021
251	Loej	Loej	Vimal mulu	2245	09/06/2015	Bholenath	II	03/05/2020	58.8	9.3	03/04/2021
252	Loej	Loej	Kana bhima	13388	22/12/2014	Bholenath	II	12/06/2020	65.7	9.9	15/04/2021
253	Loej	Mankhetra	Bharat bhama	2699	23/01/2015	Bholenath	II	20/12/2020	70.9	10.6	28/10/2021

254	Loej	Loej	Swamimandir	5785	04/03/2015	Bholenath	II	25/11/2020	68.8	10.5	25/09/2021
255	Pipali	Kaj	Parmar arjan	9494	14/08/2015	Dhingalo	II	03/12/2017	27.7	8.3	20/09/2018
256	Pipali	Advi	Dodiya dinesh bhai	2986	08/05/2015	Dhingalo	II	10/07/2018	38.1	7.6	20/05/2019
257	Pipali	Advi	Parmar jeshing	2966/b0178	15/07/2015	Dhingalo	II	02/12/2018	40.6	6.6	28/09/2019
258	Pipali	Velva	Makvana manu bhai	2981	18/05/2015	Dhingalo	II	07/01/2019	43.7	5.5	02/11/2019
259	Mandlikpur	Bilkha	Dhanji bhai	3820	17/07/2015	Dhingalo	II	10/12/2019	52.8	8.0	08/10/2020
260	Loej	Bamanavada	Jagamal hamir	1585	25/07/2015	Dhingalo	II	08/01/2020	53.5	8.9	05/11/2020
261	Loej	Loej	Arajan marakhi	1589	14/07/2015	Dhingalo	II	09/11/2019	51.9	9.3	10/09/2020
262	Pipali	Harmadiya	Poshiya ramji bhai	2969	14/06/2015	Dhingalo	II	17/12/2019	54.1	5.9	13/11/2020
263	Pipali	Kodinar	Parmar bhavesh bhai	2984	31/05/2015	Dhingalo	II	07/11/2019	53.3	6.4	07/09/2020
264	Mandlikpur	Khadiya	Bharat bhikha bhai	1960	09/05/2015	Dhingalo	II	18/01/2020	56.4	7.1	16/11/2020
265	Odadar	Ratanapra	Raju bhai	4951	20/06/2015	Dhingalo	II	03/07/2019	48.5	6.7	14/06/2020
266	Loej	Rahij	Karashan raja	805	20/07/2015	Dhingalo	II	11/07/2020	59.8	9.7	25/04/2021
267	Pipali	Sonpara	Pochiya velji	9496	23/08/2015	Dhingalo	II	20/09/2020	61.0	7.8	26/07/2021
268	Pipali	Jamanvada	Chavda bharat	2962	21/07/2015	Dhingalo	II	03/11/2020	63.5	7.0	26/09/2021
269	Pipali	Dudana	Rathod kanu	2955	10/09/2015	Dhingalo	II	22/10/2020	61.4	7.6	20/08/2021
270	Loej	Kankasha	Arajan karashan	1787	25/07/2015	Dhingalo	II	05/11/2020	63.5	9.7	05/09/2021
271	Odadar	Balej	Devashi ghela gangani	A4909	15/05/2015	Dhingalo	II	12/08/2020	63.0	11.2	20/07/2021
272	Pipali	Pedhavada	Solni dinesh	9498	31/08/2015	Dhingalo	II	11/06/2020	57.4	8.1	28/04/2021
273	Pipali	Mitiyaj	Gohil prakash	9492	07/08/2015	Dhingalo	II	19/04/2020	56.4	8.4	23/02/2021
274	Odadar	Rajpra	Samla bhai	Old tag 3687 new tag g1879	16/07/2015	Dhingalo	II	28/06/2020	59.5	10.1	20/04/2021
275	Odadar	Ratanapra	Arjan aebha bhai	3672	30/07/2015	Dhingalo	II	25/06/2020	58.9	7.6	30/05/2021
276	Odadar	Ratanapra	Haja arbham bhai	3983	16/06/2015	Dhingalo	II	10/06/2020	59.9	10.1	10/04/2021
277	Odadar	Ratiya	Jetmal bhai	3967	27/06/2015	Dhingalo	II	20/07/2020	60.8	9.9	21/05/2021
278	Odadar	Oladar	Rajshi bhai	3675	08/06/2015	Dhingalo	II	15/04/2020	58.3	10.7	15/02/2021
279	Odadar	Oladar	Naga bhima	3635	20/06/2015	Dhingalo	II	26/05/2020	59.2	10.4	26/03/2021
280	Loej	Manakhetra	Jagadish kachela	7445	20/12/2010	Haresh	II	08/05/2015	52.6	7.7	15/12/2015
281	Loej	Kankasha	Menasi kana	1751	21/12/2010	Haresh	II	27/01/2017	73.3	8.4	29/08/2017
282	Loej	Loej	Ram karashan	1755	16/12/2010	Haresh	II	28/01/2017	73.5	8.3	15/12/2017
283	Loej	Bamanavada	Arasi haja	1783	27/12/2010	Haresh	II	19/01/2017	72.8	8.3	29/11/2017
284	Loej	Rahij	Natha uka	13005	01/12/2011	Haresh	II	03/05/2016	53.1	8.8	30/11/2016
285	Loej	Manakhetra	Pithabhai mori	3103	22/03/2011	Haresh	II	24/12/2016	69.2	8.0	22/10/2017
286	Loej	Nagichana	Arajan masari	890	12/05/2011	Haresh	II	15/07/2017	74.2	9.2	15/05/2018
287	Loej	Chandavana	Masari dabhi	1916	21/05/2011	Haresh	II	03/07/2017	73.5	8.9	16/05/2018
288	Loej	Manakhetra	Bharat hamir	391	28/07/2011	Haresh	II	30/07/2016	60.1	9.0	02/03/2017
289	Loej	Rahij	Devasi oghad	13000	19/08/2011	Haresh	II	29/11/2014	39.4	11.1	16/05/2015
290	Loej	Kankasha	Vira laxaman	316	15/11/2011	Haresh	II	12/11/2016	60.0	9.7	14/06/2017
291	Loej	Rahij	Bhikhubha rupsing	2295	09/12/2012	Haresh	II	12/01/2016	37.1	9.3	15/08/2016
292	Pipali	Sonpara	Surabhai bapu	11820	06/02/2011	Haresh	II	11/07/2016	65.2	6.8	03/05/2017
293	Pipali	Pipali	Bhikhabhai kubhabhai gohil	9416	26/11/2011	Haresh	II	07/11/2015	47.4	7.9	07/09/2016
294	Pipali	Devalpur	Manubhai mepabhai	9418	29/11/2011	Haresh	II	01/11/2015	47.1	8.5	05/09/2016
295	Pipali	Fafni	Bodhabhai pamak	9419	23/11/2011	Haresh	II	07/10/2015	46.5	8.2	20/08/2016
296	Pipali	Vitalpur	Valjibhai parsotambhai	9415	14/11/2011	Haresh	II	13/09/2015	46.0	7.8	23/08/2016
297	Pipali	Advi	Ramsinh meramanbhai mori	9420	08/11/2011	Haresh	II	07/09/2015	46.0	9.5	28/08/2016
298	Pipali	Velan	Solanki lakhaman	11839	30/12/2011	Haresh	II	04/03/2016	50.2	6.1	07/01/2017
299	Pipali	Fafni	Naja ramu	11801	16/01/2012	Haresh	II	19/03/2016	50.1	6.4	11/02/2017
300	Pipali	Aalidar	Ranbir bhagvan	11810	24/03/2012	Haresh	II	21/07/2016	51.9	7.5	03/05/2017
301	Movana	Badodar	Manu kana bheda	A171	25/11/2011	Haresh	II	21/08/2015	44.9	7.3	15/06/2016
302	Loej	Makatupur	Arajan deva	1976	28/03/2011	Haresh	II	19/06/2018	86.8	8.7	29/04/2019
303	Loej	Loej	Somat kara	327	25/11/2011	Haresh	II	08/10/2015	46.5	10.1	15/08/2016
304	Loej	Rahij	Karashan raja	1971	28/08/2011	Haresh	II	09/07/2018	82.4	9.8	15/05/2019
305	Loej	Bamanavada	Kara devanand	393	20/08/2011	Haresh	II	26/10/2018	86.3	10.1	11/09/2019
306	Loej	Loej	Vimal naran	1938	12/05/2011	Haresh	II	03/08/2018	86.8	8.8	10/06/2019
307	Loej	Kankasha	Naran jagamal	621	19/08/2015	Haresh	II	14/08/2019	47.9	9.1	16/06/2020
308	Odadar	Rajpra	Savdas bhikha	3987	20/08/2015	Haresh	II	15/07/2020	58.9	8.2	15/05/2021
309	Odadar	Ratanapra	Popat ram	3697	10/09/2015	Haresh	II	06/08/2020	58.9	8.2	30/07/2021
310	Odadar	Ratiya	Bhikhu naran	3985	29/08/2015	Haresh	II	22/07/2020	58.8	8.0	30/05/2021
311	Odadar	Oladar	Lila ramde	B4584	28/08/2015	Haresh	II	20/07/2020	58.8	7.4	27/05/2021
312	Odadar	Ratiya	Deva meru	3700	02/09/2015	Haresh	II	11/10/2020	61.3	7.9	16/08/2021
313	Odadar	Oladar	Kara lila	3677	03/09/2015	Haresh	II	17/09/2020	60.5	7.6	01/08/2021
314	Odadar	Chikash	Ram bhai	3699	11/09/2015	Haresh	II	06/08/2020	58.9	8.4	10/06/2021
315	Odadar	Balej	Mulu raja bhai	3683	12/09/2015	Haresh	II	18/03/2020	54.2	8.2	25/01/2021
316	Odadar	Chikash	Malde karshan	3694	30/08/2015	Haresh	II	23/07/2020	58.8	8.7	27/05/2021
317	Loej	Rahij	Veja bhima	374	25/08/2012	Moti	II	02/08/2016	47.3	8.9	03/06/2017
318	Loej	Shapur	Bavan rana	883	16/08/2012	Moti	II	20/07/2017	59.1	10.7	31/05/2018
319	Loej	Loej	Bhima nathu	347	08/12/2012	Moti	II	11/09/2016	45.1	9.1	03/07/2017
320	Loej	Kankasha	Haradash govind	335	12/12/2012	Moti	II	08/12/2016	47.9	9.2	18/07/2017
321	Loej	Rahij	Ram kara	892	11/12/2012	Moti	II	22/07/2017	55.4	10.0	20/06/2018
322	Loej	Loej	Malade lumbha	7406	12/12/2012	Moti	II	12/12/2015	36.0	10.4	10/01/2017
323	Loej	Shil	Varajang karashan	2283	10/12/2012	Moti	II	08/04/2016	39.9	9.2	08/05/2017
324	Loej	Nagichana	Saraman arajan	2695	10/02/2013	Moti	II	05/08/2016	41.8	7.6	05/06/2017
325	Loej	Kankasha	Vira arasi	1929/3106	17/05/2013	Moti	II	10/12/2016	42.8	8.7	08/10/2017
326	Mandlikpur	Bilkha	Fula vira kumbhani	2392	12/01/2012	Moti	II	16/03/2016	50.1	10.5	15/02/2017
327	Mandlikpur	Bilkha	Natu natha virali	10724	25/01/2012	Moti	II	20/03/2016	49.8	8.9	19/01/2017
328	Mandlikpur	Anandpur	Kamlesh jaman	3341	25/11/2012	Moti	II	16/03/2017	51.7	9.9	16/01/2018
329	Mandlikpur	Hadmatiya	Parbat bhanu	10753	04/12/2012	Moti	II	22/03/2017	51.6	10.2	21/01/2018
330	Mandlikpur	Chorvadi	Aravind gordhan	2384	14/01/2013	Moti	II	11/03/2017	49.9	8.4	10/01/2018
331	Mandlikpur	Rameshvar	Bachu manji	1932	14/02/2013	Moti	II	25/03/2017	49.3	8.3	24/12/2017
332	Mandlikpur	Toraniya	Jaynti vala	B094	29/04/2013	Moti	II	21/10/2017	53.8	8.1	21/08/2018
333	Mandlikpur	Bilkha	Vithalbhai natha	7075	26/06/2013	Moti	II	10/07/2017	48.5	8.7	11/05/2018
334	Mandlikpur	Kariya	Dosa devsi	A099	28/06/2013	Moti	II	12/08/2017	49.5	9.6	12/06/2018
335	Mandlikpur	Prabhatpur	Kishor kachara suvagiya	10738	23/08/2013	Moti	II	21/11/2017	51.0	8.7	22/09/2018
336	Mandlikpur	Anandpur	Kamlesh jaman dobariya	A023	12/11/2013	Moti	II	13/01/2018	50.1	8.3	15/11/2018
337	Mandlikpur	Bhalgam	Lalit mansukh hirapara	10746	20/11/2013	Moti	II	10/11/2017	47.7	8.0	11/09/2018
338	Mandlikpur	Toraniya	Daya bhagvanji kumbhani	10743	28/11/2013	Moti	II	12/12/2017	48.5	9.1	12/10/2018

339	Mandlikpur	Khadiya	Karshan narayan kadoriya	10796	15/12/2013	Moti	II	03/04/2017	39.6	9.9	03/02/2018
340	Mandlikpur	Toraniya	Narayan gangdas	A095	20/12/2013	Moti	II	05/11/2017	46.6	9.1	06/09/2018
341	Surva	Gundarada	Bhikhabhai varu	12637	24/01/2012	Moti	II	10/04/2016	50.6	9.0	05/02/2017
342	Surva	Khandheri	Pitha kana	699	26/01/2012	Moti	II	09/01/2016	47.5	11.5	10/11/2016
343	Surva	Gundarada	Hera rana	3490	02/02/2012	Moti	II	17/06/2017	64.5	9.6	17/04/2018
344	Surva	Gundarada	Govind bhadrka	9831	20/02/2012	Moti	II	24/04/2016	50.1	8.2	15/03/2017
345	Surva	Khandheri	Pitha kana	9916	28/02/2012	Moti	II	15/02/2017	59.6	11.4	15/12/2017
346	Surva	Madhupur	Praful jesiya	12595	21/04/2012	Moti	II	21/04/2016	48.0	6.8	22/02/2017
347	Harmadiya	Aalidar	Ambhu bhai	2957	30/04/2013	Moti	II	30/04/2017	48.0	7.0	15/01/2019
348	Movana	Chandigadh	Bhikha lakha modha	A180	01/03/2012	Moti	II	11/04/2015	37.3	8.4	15/02/2016
349	Movana	Chitri	Jiva karshan sihar	A483	04/03/2012	Moti	II	15/09/2015	42.4	8.8	15/07/2016
350	Movana	Ghansari	Gopal ravji	10053	04/05/2013	Moti	II	04/08/2016	39.1	9.4	30/05/2017
351	Movana	Movana	Mansukh devaji	10854	01/07/2012	Moti	II	01/06/2016	47.0	8.1	28/03/2017
352	Pipali	Ronaj	Bhikha savliya	A2157	28/03/2013	Moti	II	03/01/2018	57.3	7.2	05/11/2018
353	Pipali	Dhamlej	Bhupat barad	A2174	08/03/2013	Moti	II	08/10/2017	55.1	7.2	22/08/2018
354	Pipali	Dhamlej	Ranjit chuhan	A2153	17/03/2013	Moti	II	09/11/2017	55.8	7.3	28/09/2018
355	Pipali	Fafni	Haribhai godhani	A2179	14/11/2013	Moti	II	10/10/2017	46.9	7.7	22/08/2018
356	Pipali	Dudana	Bhagvan rathod	9412	26/12/2012	Moti	II	03/05/2018	64.2	7.7	07/03/2019
357	Mandlikpur	Itala	Bhagvan hardas	B0921	23/06/2013	Moti	II	20/09/2018	63.0	5.5	21/07/2019
358	Harmadiya	Aalidar	Karshan veish	B2653	29/03/2013	Moti	II	29/08/2018	65.1	5.8	10/07/2019
359	Harmadiya	Aalidar	Bhikhu chauhan	B2957	02/07/2013	Moti	II	19/07/2018	60.6	6.6	23/02/2019
360	Harmadiya	Aalidar	Hameer rabari	2938	29/05/2013	Moti	II	14/05/2018	59.5	7.0	28/03/2019
361	Mandlikpur	Bilkha	Babu sanbhu vekariya	B5897	05/10/2013	Moti	II	04/11/2018	61.0	8.7	06/09/2019
362	Mandlikpur	Bilkha	Ramesh bhikha	B5505	13/08/2013	Moti	II	16/02/2019	66.2	7.6	17/12/2019
363	Loej	Kankasha	Vira arasi	1929	17/05/2013	Moti	II	02/11/2018	65.6	11.2	30/08/2019
364	Loej	Menej	Naran haradash	2294	28/01/2013	Moti	II	22/08/2018	66.8	8.9	30/06/2019
365	Loej	Atroli	Vajasi lila	652	11/12/2012	Moti	II	10/03/2020	87.0	9.8	10/01/2021
366	Loej	Rahij	Kara arajan	5750	23/12/2012	Moti	II	10/07/2020	90.6	10.6	08/05/2021
367	Pipali	Mitiyaj	Barad kishan	2924	07/10/2015	Raja	II	14/01/2018	27.3	6.7	20/11/2018
368	Loej	Loej	Ram meraman	6613	18/10/2015	Raja	II	02/06/2018	31.5	9.4	30/03/2019
369	Loej	Kankasha	Jadav masari	1759	12/10/2015	Raja	II	15/11/2018	37.2	9.3	15/09/2019
370	Loej	Rahij	Karashan raja	878	23/11/2015	Raja	II	19/12/2018	36.9	8.2	20/10/2019
371	Loej	Bamanavada	Bhimasi rana	695	13/09/2015	Raja	II	23/08/2019	47.3	8.6	23/06/2020
372	Mandlikpur	Bilkha	Narendra devji	2318	05/09/2015	Raja	II	19/08/2019	47.5	8.3	16/06/2020
373	Loej	Nagichana	Bharat bhimasi	293	23/11/2015	Raja	II	30/12/2019	49.2	10.9	30/10/2020
374	Loej	Shil	Mohan laxaman	268	05/09/2015	Raja	II	13/12/2019	51.3	10.8	30/09/2020
375	Odadar	Ratanpar	Hamir parbat	G1874	16/11/2015	Raja	II	18/09/2019	46.1	6.9	29/06/2020
376	Odadar	Ratanapra	Rama lila	3942	07/10/2015	Raja	II	08/01/2020	51.1	7.0	13/12/2020
377	Odadar	Chhaya	Babu hardas	3686	20/11/2015	Raja	II	24/12/2019	49.2	7.0	25/10/2020
378	Odadar	Balej	Hardas jadav	3658	23/10/2015	Raja	II	05/09/2019	46.5	6.9	20/07/2020
379	Loej	Rahij	Viram keshur	302	30/11/2015	Raja	II	27/02/2020	51.0	10.1	30/12/2020
380	Loej	Nagichana	Haja kara	599	24/09/2015	Raja	II	03/01/2020	51.4	9.6	05/11/2020
381	Loej	Kankasha	Menasi kana	5706	27/09/2015	Raja	II	07/12/2019	50.4	9.9	07/10/2020
382	Loej	Kankasha	Haradash govind	1551	11/10/2015	Raja	II	08/10/2019	47.9	9.8	10/08/2020
383	Loej	Bamanavada	Mulu devarakhi	1583	28/10/2015	Raja	II	09/08/2020	57.4	10.1	11/01/2021
384	Loej	Kankasha	Jadav masari	862	30/10/2015	Raja	II	28/12/2019	50.0	10.2	30/10/2020
385	Loej	Nagichana	Menasi lakha	368	18/10/2015	Raja	II	01/01/2020	50.5	9.2	01/11/2020
386	Loej	Kankasha	Saraman vajasi	1560	18/11/2015	Raja	II	07/03/2020	51.6	10.0	07/01/2021
387	Loej	Loej	Govind marakhi	341	21/11/2015	Raja	II	05/03/2020	51.5	9.9	06/01/2021
388	Loej	Nagichana	Arajan vajasi	311	11/11/2015	Raja	II	03/08/2020	56.8	9.7	03/06/2021
389	Loej	Kankasha	Lala jagamal	654	23/11/2015	Raja	II	01/06/2020	54.3	9.6	30/03/2021
390	Loej	Kankasha	Uka malade	668	26/09/2015	Raja	II	15/09/2020	59.7	9.9	10/07/2021
391	Loej	Rahij	Khima suda	1521	26/10/2015	Raja	II	04/04/2020	53.3	10.4	05/02/2021
392	Loej	Kankasha	Naran meraman	208	06/09/2015	Raja	II	15/11/2020	62.4	10.0	15/08/2021
393	Odadar	Rajpra	Vana suka	3943	13/09/2015	Raja	II	25/04/2020	55.4	10.7	20/02/2021
394	Odadar	Rajpar	Natha ram aagath	New tag g0991	15/11/2015	Raja	II	25/09/2020	58.4	11.7	10/08/2021
395	Loej	Rahij	Kara oghad	367	19/10/2015	Raja	II	15/03/2021	64.9	10.6	15/01/2022
396	Surva	Madhupur	Ramesh ravdiya	3211	16/11/2015	Raja	II	20/01/2020	50.2	9.2	15/11/2020
397	Surva	Surva	Haresh pansuriya	3234	06/12/2015	Raja	II	25/02/2021	62.7	11.1	15/12/2021
398	Surva	Gundaran	Dhiru vala	3236	12/12/2015	Raja	II	30/09/2019	45.6	11.1	15/07/2020
399	Surva	Khanderi	Pitha kana	3264	09/01/2016	Raja	II	10/05/2021	64.0	14.5	10/03/2022
400	Surva	Akolvadi	Vallabh bhuva	3267	17/01/2016	Raja	II	20/01/2021	60.2	9.2	15/11/2021
401	Odadar	Oladar	Vasta karshan	3692	19/09/2015	Raja	II	22/08/2020	59.1	9.9	30/06/2021
402	Loej	Mankhetra	Kachara narasing	241	21/02/2013	Sundar	II	08/03/2017	48.5	7.6	08/01/2018
403	Loej	Mankhetra	Jagadish bachu	248	30/03/2013	Sundar	II	07/09/2017	53.3	10.0	06/07/2018
404	Loej	Loej	Arajan malade	247	06/04/2013	Sundar	II	08/10/2017	54.1	9.1	15/08/2018
405	Loej	Rahij	Bhoja govind	319	09/04/2013	Sundar	II	03/01/2018	56.9	8.0	30/10/2018
406	Loej	Nagichana	Haradash parabat	4454	07/05/2013	Sundar	II	09/09/2016	40.1	9.6	08/08/2017
407	Loej	Mankhetra	Mansing arajan	286	11/05/2013	Sundar	II	03/12/2017	54.8	8.7	30/10/2018
408	Loej	Kankasha	Bhikha bhaya	2281	24/05/2013	Sundar	II	24/11/2017	54.1	9.5	30/11/2018
409	Loej	Kankasha	Arajan devasi	7453	03/06/2013	Sundar	II	12/10/2017	52.3	9.5	17/08/2018
410	Loej	Nagichana	Ram haja	5747	20/06/2013	Sundar	II	10/11/2016	40.7	8.5	08/10/2017
411	Pipali	Kaj	Ram bhai	187	05/06/2014	Sundar	II	07/09/2017	39.1	7.3	29/06/2018
412	Pipali	Dhamlej	Dina bapu	112	21/06/2014	Sundar	II	03/01/2018	42.5	8.1	20/10/2018
413	Loej	Loej	Naran somat	267	11/02/2013	Sundar	II	10/05/2018	62.9	9.3	15/03/2019
414	Loej	Kankasha	Suda rama	1438	15/04/2013	Sundar	II	10/06/2018	61.9	8.4	10/04/2019
415	Loej	Rudalpur	Jayesh parabat	253	22/06/2013	Sundar	II	28/12/2017	54.2	8.6	30/10/2018
416	Loej	Bamanavada	Ram jiva	259	07/06/2013	Sundar	II	07/06/2017	48.0	9.0	31/12/2018
417	Loej	Kankasha	Bhaya devasi	591	25/06/2013	Sundar	II	03/07/2018	60.3	8.6	29/04/2019
418	Loej	Loej	Jetha vira	2219	02/07/2014	Sundar	II	20/07/2017	36.6	7.7	26/05/2018
419	Loej	Sangavada	Lala vira	13243	12/07/2014	Sundar	II	08/06/2018	46.9	9.0	10/03/2019
420	Loej	Divasa	Natha bhadaraka	5744	23/07/2013	Sundar	II	10/07/2018	59.6	8.9	16/05/2019
421	Loej	Loej	Raju malade	237	30/04/2014	Sundar	II	08/08/2018	51.3	9.5	06/06/2019
422	Loej	Madhavpur	Mohan savadas	235	10/05/2014	Sundar	II	17/07/2018	50.3	8.8	20/05/2019
423	Loej	Zariyavada	Hamidkha abibkha	232	22/05/2014	Sundar	II	06/08/2018	50.5	8.5	16/06/2019

424	Loej	Kankasha	Govind karashan	1924	20/02/2013	Sundar	II	03/11/2018	68.4	11.7	05/09/2019
425	Loej	Sangavada	Bachu laxaman	252	14/07/2014	Sundar	II	08/11/2018	51.9	8.8	16/09/2019
426	Loej	Bamanavada	Laxaman ala	205	10/07/2014	Sundar	II	20/11/2018	52.4	9.8	25/09/2019
427	Loej	Nagichana	Raja naga	602	02/06/2013	Sundar	II	29/09/2019	75.9	8.8	30/07/2020
428	Loej	Rahij	Kara oghad	658	22/07/2013	Sundar	II	11/01/2020	77.7	9.6	14/11/2020
429	Loej	Nagichana	Ram marakhi	4498	18/05/2016	Abhijit	III	10/09/2020	51.8	10.3	11/07/2021
430	Loej	Rahij	Devasi oghad	663	11/07/2016	Abhijit	III	11/09/2020	50.1	10.1	05/07/2021
431	Loej	Kankasha	Mohan pitha	1708	09/05/2016	Abhijit	III	13/08/2020	51.2	10.6	13/06/2021
432	Loej	Mankhetra	Bharat bhama	1702	13/05/2016	Abhijit	III	06/07/2020	49.8	8.8	05/05/2021
433	Loej	Kankasha	Mulu meraman	4253	14/05/2016	Abhijit	III	10/07/2020	49.9	10.3	10/05/2021
434	Mandlikpur	Khadiya	Mahesh laljibhai	12877	22/06/2016	Abhijit	III	01/09/2020	50.4	8.3	01/07/2021
435	Loej	Nagichana	Haradash parabat	4401/4402	27/06/2016	Abhijit	III	05/12/2020	53.3	9.7	05/10/2021
436	Loej	Bamanavada	Vikram meraman	4492	08/05/2016	Abhijit	III	05/11/2020	54.0	10.8	05/09/2021
437	Odadar	Ratanpar	Deva arbham odedra	3659	09/05/2016	Abhijit	III	15/06/2020	49.2	10.4	21/05/2021
438	Loej	Bamanavada	Saraman ala	4468	30/06/2016	Abhijit	III	24/03/2021	56.8	10.2	30/01/2022
439	Surva	Gundaran	Punja bhai bera	4844	31/01/2017	Alok	III	01/02/2020	36.0	14.6	30/11/2020
440	Surva	Gundaran	Dhirubhai vala	4869	15/04/2017	Alok	III	12/03/2021	46.9	9.0	15/01/2022
441	Loej	Kankasha	Arajan vira	5800	03/03/2017	Alok	III	13/05/2021	50.4	10.6	16/03/2022
442	Loej	Shil	Arajan karashan	1995	21/04/2017	Alok	III	28/05/2021	49.2	11.5	01/04/2022
443	Loej	Kankasha	Hira tapu	1994	30/04/2017	Alok	III	13/05/2021	48.5	11.9	16/03/2022
444	Loej	Bamanavada	Saranan varajang	5798	09/03/2017	Alok	III	10/05/2021	50.1	10.7	10/03/2022
445	Loej	Kankasha	Devat patat	5729	25/02/2017	Alok	III	06/06/2021	51.4	10.3	05/04/2022
446	Loej	Bamanavada	Arajan natha	1961	10/05/2017	Alok	III	02/05/2021	47.8	11.4	02/04/2022
447	Loej	Kankasha	Hira tapu	1993	20/04/2017	Alok	III	19/06/2021	50.0	10.9	20/04/2022
448	Loej	Loej	Malade lumbha	1996	09/04/2017	Alok	III	21/05/2021	49.4	10.2	21/04/2022
449	Loej	Rahij	Ram jetha	1998	30/03/2017	Alok	III	06/05/2021	49.2	9.9	05/03/2022
450	Loej	Shil	Parashotam rana	1999	29/03/2017	Alok	III	09/05/2021	49.4	10.9	10/03/2022
451	Loej	Bamanavada	Naran veja	1991	12/02/2017	Alok	III	03/06/2021	51.7	10.6	18/04/2022
452	Loej	Nagichana	Sanjay khima	5799	11/03/2017	Alok	III	10/04/2021	49.0	10.7	10/02/2022
453	Loej	Nagichana	Haja kara	5727	26/12/2016	Girish	III	23/11/2020	46.9	8.5	25/09/2021
454	Loej	Loej	Ram meraman	5792	31/12/2016	Girish	III	06/01/2021	48.2	10.6	10/11/2021
455	Loej	Rahij	Ram veja	5793	17/01/2017	Girish	III	25/03/2021	50.2	11.0	25/01/2022
456	Loej	Kankasha	Vira arasi	5794	23/01/2017	Girish	III	11/02/2021	48.7	10.3	10/12/2021
457	Loej	Mankhetra	Kana khima	5791	02/01/2017	Girish	III	03/02/2021	49.1	11.2	03/12/2021
458	Loej	Bamanavada	Rajasi bhikha	5775	27/12/2016	Girish	III	03/01/2021	48.3	11.0	03/11/2021
459	Loej	Nagichana	Viram haja	5726	22/12/2016	Girish	III	20/12/2020	48.0	11.3	25/10/2021
460	Loej	Bamanavada	Arajan karashan	1709	18/02/2016	Madhav	III	20/07/2020	53.1	12.1	20/01/2021
461	Loej	Mankhetra	Bhikha naran	4280	27/02/2016	Madhav	III	10/03/2020	48.4	9.6	10/01/2021
462	Loej	Nagichana	Veja haradash	4202	05/03/2016	Madhav	III	08/03/2020	48.1	9.7	08/01/2021
463	Loej	Loej	Jetha vira	4277	20/03/2016	Madhav	III	05/05/2020	49.5	10.2	05/03/2021
464	Loej	Rahij	Jagamal mulu	4225	07/04/2016	Madhav	III	20/05/2020	49.4	9.5	17/03/2021
465	Loej	Kankasha	Mulu meraman	4279	24/03/2016	Madhav	III	03/04/2020	48.4	9.6	03/02/2021
466	Loej	Loej	Kana menasi	4272	25/03/2016	Madhav	III	01/05/2020	49.2	10.4	28/02/2021
467	Loej	Kankasha	Naran lakha	4208	01/03/2016	Madhav	III	05/04/2020	49.2	10.5	05/02/2021
468	Loej	Loej	Bhaya meraman	1595	15/02/2016	Madhav	III	29/10/2020	56.5	10.2	30/08/2021
469	Loej	Nagichana	Haradash keshar	1704	26/04/2016	Madhav	III	16/08/2020	51.7	10.6	15/06/2021
470	Loej	Shil	Bhima saraman	4274	16/03/2016	Madhav	III	10/06/2020	50.9	10.0	10/04/2021
471	Loej	Rahij	Natha uka	4229	15/04/2016	Madhav	III	08/06/2020	49.8	9.6	08/04/2021
472	Mandlikpur	Nagalpur	Samju ranchhod vekariya	12817	13/07/2016	Madhav	III	17/06/2020	47.2	7.0	17/04/2021
473	Mandlikpur	Bilkha	Keshu bhikha bhanderi	12844	08/05/2016	Madhav	III	26/07/2020	50.6	7.1	27/05/2021
474	Mandlikpur	Bilkha	Jaga bhima bharvad	12824	23/05/2016	Madhav	III	15/08/2020	50.8	7.9	17/06/2021
475	Surva	Gundaran	Bhikha varubhai	916	05/04/2016	Madhav	III	07/03/2020	47.1	7.4	05/01/2021
476	Pipali	Pandar	Kamliya babu	2944	21/11/2015	Nayan	III	19/09/2017	22.0	7.6	03/07/2018
477	Mandlikpur	Khadiya	Pravin ram / dinesh vala	3318	09/11/2015	Nayan	III	14/09/2019	46.2	6.0	13/07/2020
478	Mandlikpur	Chorvadi	Jadav jina	3319	11/11/2015	Nayan	III	30/12/2019	49.6	7.8	29/10/2020
479	Loej	Rahij	Laxaman meraman	206	03/12/2015	Nayan	III	20/10/2019	46.6	8.8	25/08/2020
480	Loej	Mankhetra	Pitha mori	1581	19/12/2015	Nayan	III	03/08/2019	43.5	10.3	05/07/2020
481	Loej	Bamanavada	Natha ala	1590	26/12/2015	Nayan	III	08/09/2019	44.4	9.8	08/07/2020
482	Odadar	Odadar	Meraman ramde pra. Shala	3637 new tag g0929	10/12/2015	Nayan	III	04/08/2019	43.8	7.2	30/06/2020
483	Loej	Nagichana	Laxaman ram	1555	28/12/2015	Nayan	III	08/02/2020	49.4	10.7	08/12/2020
484	Loej	Loej	Kishor rana	4235	11/12/2015	Nayan	III	02/02/2020	49.8	10.7	02/12/2020
485	Loej	Mankhetra	Pitha mori	310	22/12/2015	Nayan	III	05/01/2020	48.5	10.1	05/11/2020
486	Loej	Nagichana	Marakhi haradash	4266	29/12/2015	Nayan	III	06/02/2020	49.3	10.3	07/12/2020
487	Loej	Mankhetra	Sanjay raja	4269	15/01/2016	Nayan	III	20/11/2019	46.2	10.8	21/09/2020
488	Loej	Bamanavada	Ramade rajasi	301	20/12/2015	Nayan	III	30/01/2020	49.4	10.0	27/11/2020
489	Loej	Loej	Laxaman devat	653	25/12/2015	Nayan	III	10/04/2020	51.6	9.8	10/02/2021
490	Loej	Bamanavada	Govind pithiya	4242	22/02/2016	Nayan	III	10/04/2020	49.6	10.3	10/02/2021
491	Loej	Bamanavada	Govind rana	1552	03/01/2016	Nayan	III	19/03/2020	50.5	10.0	20/01/2021
492	Loej	Loej	Jeta naran	4265	31/12/2015	Nayan	III	08/11/2019	46.3	8.9	08/09/2020
493	Loej	Kankasha	Jadav masari	4261	19/01/2016	Nayan	III	03/04/2020	50.5	9.9	03/02/2021
494	Loej	Kankasha	Haradash govind	4246	22/01/2016	Nayan	III	01/03/2020	49.3	9.5	30/12/2020
495	Mandlikpur	Chorvadi	Hiraji mohan	3330	10/12/2015	Nayan	III	15/03/2020	51.2	8.3	16/03/2021
496	Loej	Shil	Yogesh menasi	4244	03/02/2016	Nayan	III	01/08/2020	54.0	10.7	30/05/2021
497	Loej	Nagichana	Arajan bhimasi	5705	29/01/2016	Nayan	III	05/08/2020	54.2	10.3	05/06/2021
498	Odadar	Odadar	Rama pola	4969	18/09/2016	Ronak	III	11/11/2020	49.8	7.6	10/08/2020
499	Mandlikpur	Khadiya	Bhima kala bandhiiya	12839	14/10/2016	Ronak	III	22/08/2020	46.3	9.2	24/06/2021
500	Mandlikpur	Khadiya	Dipak bhana koli	12842	05/10/2016	Ronak	III	01/07/2020	44.9	7.7	30/04/2021
501	Mandlikpur	Nagalpur	Samji govind vekariya	12831	09/09/2016	Ronak	III	10/08/2020	47.0	8.8	10/06/2021
502	Mandlikpur	Bilkha	Pravin bhimaji panchani	12805	28/08/2016	Ronak	III	10/08/2020	47.4	8.4	11/06/2021
503	Mandlikpur	Khadiya	Pravin rambhai	12888	29/07/2016	Ronak	III	13/08/2020	48.5	8.0	13/06/2021
504	Mandlikpur	Khadiya	Ram haja	12822	15/09/2016	Ronak	III	13/08/2020	46.9	8.0	15/06/2021
505	Mandlikpur	Bilkha	Harji jamnadas	12881	25/09/2016	Ronak	III	20/08/2020	46.8	9.0	22/06/2021
506	Loej	Bamanavada	Marakhi mulu	853	09/09/2016	Ronak	III	10/02/2021	53.1	10.7	10/12/2021
507	Odadar	Ratanpar	Arjan aebha	G0922	29/10/2016	Ronak	III	15/11/2020	48.6	9.7	25/09/2021
508	Loej	Bamanavada	Ram raja	843	24/09/2016	Ronak	III	02/03/2021	53.3	9.8	02/01/2022

509	Surva	Khanderi	Sandip dana	4818	30/11/2016	Ronak	III	15/04/2020	40.5	11.6	15/02/2021
510	Surva	Madhupur	Babubhai rabdiya	4819	30/11/2016	Ronak	III	01/01/2021	49.1	9.5	30/10/2021
511	Surva	Gundaran	Natha vadhiya	4815	18/11/2016	Ronak	III	25/03/2021	52.2	9.2	25/01/2022
512	Loej	Nagichana	Bhimasi khima	845	15/09/2016	Ronak	III	10/12/2020	50.9	10.0	10/10/2021
								Av.	**52.6**	**9.1**	

F 14. Bull-wise AI, Conception, Calving and Daughters Retained Till Completion of Milk Recording during the Year

Bull Name	Set No.	Total AI		Conception		Calving				Daughters Retained Up to				
						Total		Female		1 year	2 year	3 year	Calving	Complete Recording
		Pro.	Cur.year (21-22)	Pro.	Cur.year (21-22)	Pro.	Cur.year (21-22)	Pro.	Cur.year (21-22)					
Ranjeet	I	243		108(179)		72		34						
Rupesh	I	777		429(661)		251		116						
Ashok	I	2120		732(1217)		715		346						
Manek	I	741		376(558)		376		182						
Bhagro	I	4747		1902(3830)		1840		877					45	45
Gajanan 4/02	I	929		502(781)		486		245						
Nagraj	I	4016		1822(2452)		799		768					44	44
Laxman	I	5343		2735(4556)		2735		1349					85	85
A		**18916**		**8606(14234)**		**7274**		**3917**					**174**	**174**
Haresh	II	1245		660(1082)		437		211					37	37
Moti	II	2459		1041(2129)		1007		472					50	50
Sunder	II	719		377(702)		329		151					27	27
Raja	II	1443		724(1378)		594		277					35	35
Dhinglo	II	1089		552(1064)		552		259					25	25
Bholenath	II	2557		1235(1988)		843		404					80	80
B		**9512**		**4589(8343)**		**3762**		**1774**					**254**	**254**
Nayan (07/10)	III	1061		403(1000)		391		164					22	22
Abhijit (A1/10)	III	619		279(619)		254		98					10	10
Madhav(37/10)	III	692		295(639)		239		105					16	16
Alok	III	1169		475(1162)		433		202			70		14	14
Ronak(09/11)	III	1737		752(1736)		670		386					15	15
Girish	III	1601		612(1565)		464		210				7	7	7
Babar	III	1520		609(1380)		431		187			9	99		
Raghu	III	1312		491(1163)		427		191				66		
Chaman	III	870		352(836)		263		110				18		
C		**10581**		**4368(10100)**		**3572**		**1653**			**79**	**190**	**84**	**84**
		0		0(0)		0		0						
Badal	IV	963		408(1028)		376		159			146	13		
Kamalesh	IV	836		331(836)		304		138		55	83			
Hamir	IV	1381	37	593(1366)		571		266		266				
Balo	IV	1143		472(1150)	3(6)	115	303	53	134	53				
Mayur	IV	783		190(457)	154(330)	0	300	0	130					
Sango	IV	217	540	0(0)	340(795)	0	163	0	80					
Nayak	IV		1354		345(779)									
D		**5323**	**1931**	**1994(4837)**	**842(1910)**	**1366**	**766**	**616**	**344**	**374**	**229**	**13**		
Gr.Total (A+B+C+D)		**44332**	**1931**	**19557(37514)**	**842(1910)**	**15974**	**766**	**7960**	**344**	**374**	**308**	**203**	**512**	**512**

F 15 Performance of FPT Programme since Inception

Duration	AI	Pregnancies	CR%	Calvings	Females Born	Daughters Recorded	Av. AFC (mth)	Av. Milk Yield (kg/day)	Daughters Available for Recording
2005-06	15					-	-	-	-
2006-07	966					-	-	-	-
2007-08	2169	1196(1907)	62.72	468	223	-	-	-	-
2008-09	2961	1141(2065)	55.25	944	455	-	-	-	-
2009-10	3070	1563(2676)	58.41	1429	694				
2010-11	3457	1613(2651)	60.84	1333	666				
2011-12	3738	1603(2918)	54.93	1538	729				
2012-13	4067	1776(3627)	48.97	1684	810				
2013-14	4121	1957(4021)	48.70	1688	801				
2014-15	4781	2150(4271)	50.34	1564	731	1	46.5	8.9	
2015-16	3375	1719(3691)	46.57	1892	867	15	50.2	9.3	
2016-17	2971	1228(3041)	40.38	1256	537	74	49.3	9.1	
2017-18	2462	1032(2436)	42.36	815	365	72	53.6	8.9	
2018-19	2013	840(1971)	42.62	803	347	89	51.6	8.7	
2019-20	1962	776(1894)	40.97	712	308	86	52.8	9.1	
2020-21	2139	928(1273)	43.38	800	374	76	52.1	9.0	
2021-22	1931	842(1910)	44.1	766	344	99	52.6	9.1	
Overall	**46198**	**20364(40352)**	**49.3**	**17692**	**8251**	**512**	**51.1**	**9.0**	

AI, Conception, Calving and Daughters Retained (Set wise)

Set - I	**Bull No.**								
	Ranjit	Rupesh	Ashok	Manek	Bhagro	Gajanan	Nagraj	Laxman	Total
AI	243	777	2120	741	4747	929	4016	5343	**18916**
Pregnancies	108	429	732	376	1902	502	1822	2735	**8606**
Daughters Born	34	116	346	182	877	245	768	1349	**3917**
Daughters Calved					45	0	44	85	**174**

Set - II	Haresh	Moti	Sundar	Raja	Dhingalo	Bholenath	Total
AI	1245	2459	719	1443	1089	2557	**9512**
Pregnancies	660	1041	377	724	552	1235	**4589**
Daughters Born	211	472	151	277	259	404	**1774**
Daughters Calved	37	50	27	35	25	80	**254**

Set - III	**Bull No.**									
	Nayan	Abhijit	Madhav	Alok	Ronak	Girish	Babar	Raghu	Chaman	Total
AI	1061	619	692	1169	1737	1601	1520	1312	870	**10581**
Pregnancies	503	279	295	475	752	612	609	491	352	**4368**
Daughters Born	164	98	105	202	386	210	187	191	110	**1653**
Daughters Calved	22	10	16	14	15	7				**84**

Set - IV	**Bull no.**						
	Badal	**Kamlesh**	**Hamir**	**Balo**	**Mayur**	**Sango**	**Total**
AI	963	836	1381	1143	783	217	**5323**
Pregnancies	408	331	593	472	190	0	**1994**
Daughters Born	159	138	266	53	0	0	**616**
Daughters Calved							

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Allocation as per R E 2021–22		Released	Expenditure as per AUC		Closing Balance
Total	ICAR Share	ICAR Share	ICAR Share	State Share	
82.00	58.50+4.00*	58.50+4.00*	50.33188+3.36272*	16.77730	8.16812+0.63728*

* Amount for SCSP

Herd Performance

Herd strength was 369 out of which 202 were breedable buffaloes (>2year). During the period 83 calving took place consisting of 37 males, 46 females, 01 still birth and 01abortion. The calf mortality (0-3 months) was 10.07 % higher than the fixed target of NPBI ≤ 3 %. Conception rate was 41.50 % slightly improved from last year (39.67 %). 11260 semen doses produced during 2021-22 and the centre has used for AI/Exp./sold/field 2295 frozen semen doses. 147599 frozen semen doses are available at the centre.

Production performances indicated by average lactation milk yield and 305 day or less day milk yield was 2452.0 (60) and 2375.1 kg (60) decreased from last year 2794.2 kg kg (56) and 2499.9 kg (56) respectively. The reproductive traits viz. AFC, SP, DP and calving interval were 46.90 months (20), 161 days (41), 196 days (41) and 471 days (41), respectively. The wet and herd average increased from 6.60 kg and 3.40 kg to 7.6 Kg and 4.5 Kg, respectively. 60.0 percent buffaloes were in milk during the report period.

Field Unit:

1931 AI's were performed utilization from the semen of 4 bulls of IV set in 9 centers/villages. Total 928 conceptions reported with conception rate of 44.1 %. 344 female progenies born and 99 daughters completed lactation in 2021-22.

Accomplishment and Targets Achieved:

Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
Av. Age at first calving (months)	40	54.05 (21)	49.90 (22)	46.1 ±1.4 (24)	47.81±0.86 (10)	46.90±1.82 (20)
Av. Service period (days)	130	150 (48)	180 (35)	165±18.6 (43)	144±11.70 (38)	161±12.89 (41)
Calf mortality (0-3 months)	≤ 3 %	4.5	7.9	5.45	11.11	10.7
Wet average (kg)	≥8.5 kg	6.7	5.8	6.3	6.6	7.6
Herd average (kg)	≥5.5 kg	3.0	3.6	3.2	3.4	4.5

Recommendations:

- Continuous efforts should be made to reduce calf mortality.
- Field recording should be strengthened and increase the no. of AI in the field with uniform use of test bulls.
- Milk production and reproduction traits needs to be improved.

LIVESTOCK RESEARCH STATION, VALLABHNAGAR

Report Period: 2021-22

1. **Name of center** : Livestock Research Station,Vallabhnagar RAJVASU, Bikaner
2. **Project Code** :
3. **Project Title** : Network Project on Buffalo Improvement
4. **Date of start** : 01-04-2001
5. **Objectives** : To establish elite herd of 50 Surti for the production of genetically superior young bulls. Evaluate sires through institutional/field progeny testing and to produce, test, propagate and conserve high genetic merit male germplasm

6. Technical Programme :

- Establishment and maintenance of an elite herd of Surti with herd strength of 120.
- Selection and testing of minimum 4-6 bulls in every 24 months cycle.
- Production of minimum 3000 frozen semen doses from each test bull.
- Maintain a minimum number of 2000 of frozen semen doses until the particular SET gets evaluated.
- Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
- Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
- Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days) and peak yield, milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation).
- Monthly testing of milk constituents (Fat%, SNF% and Protein %) and Somatic Cell Count, wherever feasible, at institutional herds.
- Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
- Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Financial Statement :Rs (in Lacs)

Head	**Allocation for the year (ICAR + State)**	**ICAR share 75% of expenditure**	**State Share 25% of expenditure**	**Total Expenditure**
A. Recurring				
1. Pay & Allow.	--	--	--	--
2. T.A.	--	--	--	--
3. Recurring cont.	54,00,000.00	40,49,250.00	13,49,750.00	53,99,000.00
4. Recurring cont **(SCSP)**	3,00,000.00	3,00,000.00	-	3,000,00.00
Total	**57,00,000.00**	**43,49,250.00**	**13,49,750.00**	**56,99,000.00**
A. **Non-recurring Conti**.		-	-	
1. Equipment **(SCSP)**	1,00,000.00	1,00,000.00	-	1,00,000.00
2. Equipments	4,00,000.00	3,00,000.00	1,00,000.00	4,00,000.00
Total	**5,00,000.00**	**4,00,000.00**	1,00,000.00	**5,00,000.00**
G. Total	**62,00,000.00**	**47,49,250.00**	**14,49,750.00**	**61,99,000.00**

Revenue generated: Total receipt generated during the year: Rs. 24,49,285/-

Staff associated with the project

Discipline	Name of Scientist / Staff	Status (PI/Co-PI/ Associated)
AGB	-	-
ARGO	**Dr Mitesh Gaur**	Project Incharge
ANFT	-	-
LPM	-	-
Health / Others	-	-
No. of staff		
Technical staff	-	
Contractual staff (RA / SRF / YP-I, YP-II)	One contractual clerk, Two contractual LSAs, one SRF	

Conservation Unit (Institutional herd)): Enclosed Table 9.1 to 9.21.

9.1 Herd Strength during the Period 1st April 2021 to 31st March, 2022

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P	T	D	T	S	E	
	Female								
1.	Below 3 months	**6**	17	0	9	13	0	0	**1**
2.	3-12 months	**10**	0	13	0	16	2	0	**5**
3.	1-2 years	**5**	0	16	1	5	0	0	**15**
	Above 2 years	**33**	0	5	1	10	1	0	**26**
4.	Buffaloes in Milk	**36**	0	10	1	8	9	0	**28**
5.	Buffaloes Dry P /NP	**15**	0	8	2	0	5	0	**16**
	Sub Total	**105**	**17**	**52**	**14**	**52**	**17**	**0**	**91**
	Males								
1.	Below 3 months	**7**	19	0	**3**	15	1	0	**7**
2.	3-12 months	**14**	0	15	2	19	2	0	**6**
3.	1-2 years	**14**	0	19	1	13	6	0	**13**
	Above 2 years	**19**	0	13	0	6	15	0	**11**
4.	Breeding bulls	**6**	0	6	0	0	5	0	**7**
5.	Bullocks / Teasers / others	2	0	0	0	0	0	0	**2**
	Sub Total	**62**	**19**	**53**	**6**	**53**	**29**	**0**	**46**
	Grand Total	**167**	**36**	**105**	**20**	**105**	**46**	**0**	**137**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 21	2	0	0	0	0	1	0	3
May	0	1	0	0	0	0	0	1
June	2	3	0	0	0	0	0	5
July	2	0	0	1	0	0	0	3
August	0	3	0	0	0	0	0	3
September	0	2	0	0	0	0	0	2
October	2	4	0	1	0	0	0	7
November	3	0	1	0	0	0	0	4

December	0	4	0	0	0	0	0	4
January 22	3	0	0	0	0	0	1	4
February	3	0	0	0	0	0	0	3
March	2	0	0	0	0	1	0	3
Overall	**19**	**17**	**1**	**2**	**0**	**2**	**1**	**42**

Sex ratio **Male : Female (1.12:1)** Abortion % = 4.76 %

9.3. Disposal of Animals during the Period 1st April 2021 to 31st March, 2022

Female								
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	**Total**
Calves								
0 to 3 months	0	0	0	0	0	9	0	**9**
3-12 months	2	0	0	0	0	0	0	**2**
Heifers								
1-2 years	0	0	0	0	0	1	0	**1**
> 2 years	0	0	1	0	0	1	0	**2**
Buffaloes								
Milch	1	5	1	2	0	1	0	**10**
Dry	0	2	1	2	0	2	0	**7**
Sub Total	**3**	**7**	**3**	**4**	**0**	**14**	**0**	**31**
Males								
Calves								
0 to 3 months	1	0	0	0	0	3	0	**4**
3-12 months	2	0	0	0	0	2	0	**4**
1 to 2 year	6	0	0	0	0	1	0	**7**
>2 year	15	0	0	0	0	0	0	**15**
Breeding bulls	5	0	0	0	0	0	0	**5**
Bullock+Teaser+Others	0	0	0	0	0	0	0	**0**
Sub Total	29	0	0	0	0	6	0	**35**
Grand Total	**32**	**7**	**3**	**4**	**0**	**20**	**0**	**66**

9.4. Mortality during the Period 1st April 2021 to 31st March, 2022

Female							**Male**					**Overall Herd**
	0-3 m	3-12 m	1-2 Yrs.	Above 2 Yrs.	Milk + Dry	Overall Female	0-3 m	3-12 m	1 -2 Yrs.	>2 yrs.	Overall Male	
No.	23	23	21	38	69	174	26	29	33	46	134	308
Died	9	0	1	1	3	14	3	2	1	0	6	20
%	**39.1**	**0.0**	**4.8**	**2.6**	**4.3**	**8.05**	**11.5**	**6.9**	**3.0**	**0.0**	**4.48**	**6.49**

Overall Calf Mortality = (12/49)*100 = 24.5 % Overall Mortality = (20/250)*100 = 9.8 %

9.5. Causes of Mortality (quarter wise) during the period April 21 to March 22

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	**Total**
Enteritis	-	2	5	1	**8**
Pneumonitis	-	-	2	2	**4**
Septicemia / Toxemia	-	1	1		**2**
Peritonitis	-	-	-	-	**0**
JD/TB	-	-	-	-	**0**

Milk Fever/metabolic diseases	-	-	-	-	**0**
TRP / TP	-	-	-	-	**0**
Parasitism	-	-	-	-	**0**
Accidental death	-	-	-	-	**0**
Peri-parturient disorders	-	-	-	-	**0**
Miscellaneous	2	-	1	3	**6**
Total	**2**	**3**	**9**	**6**	**20**

9.6 Prophylactic Measures undertaken

Disease	Vaccination Date	No. of animals	No. of animals Tested / Positive		Month and no. of animals treated for Parasitism	
FMD	20-06-2021	159			April	10
					May	12
HS	20-06-2021	159			June	15
					July	9
BQ	20-06-2021	159			August	13
					September	12
Brucellosis					October	10
					November	10
JD			9	0	December	13
TB			9	0	January	108
IBR					February	108
Mastitis					March	20

9.7. Female Conception Rate During the Period January to December 2021

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	10	7	70.00	4	1	25.00	3	0	0.00	0	0	-	17	8	47.06
Adults	27	22	81.48	24	8	33.33	24	6	25.00	22	2	9.09	97	38	39.18
Overall	**37**	**29**	**78.38**	**28**	**9**	**32.14**	**27**	**6**	**22.22**	**22**	**2**	**9.09**	**114**	**46**	**40.35**

AIs = No. of animals inseminated C = No. of animals conceived
CR % = Conception rate%

9.8 Quarter-wise conception rate

Quarter	No. of A I	Preg. animals	CR %
January – March	32	17	**53.13**
April - June	30	8	**26.67**
July - September	21	6	**28.57**
October- December	31	15	**48.39**
Overall	**114**	**46**	**40.35**

9.9. Bull-wise Conception Rate During the period January to December, 2021

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1.	1948	1	11	4	36.36
2.	1950	2	18	6	33.33
3.	1952	2	10	5	50.00
4.	1955	3	12	4	33.33
5.	1961	3	14	6	42.86
6.	1963	4	20	5	25.00
7.	1968	4	12	9	75.00
8.	4529	8	4	4	100.00
9.	4542	8	6	0	0.00
10.	4548	8	4	0	0.00
11.	4567	8	2	2	100.00
12.	4578	8	1	1	100.00
Over all			**114**	**46**	**40.35**
No. of services per conception					**2.48**

9.10 Bull Wise Semen Stock

Set No	Bull No	OB	Doses produced / received	Consumption for AI/supplied					Balance
				Inst herd	Field unit	NPBI centres	Sold	Total supply	
I	1948	205		22	-	-	-	22	183
I	1949	2			-	-	-	0	2
II	1950	269		36	-	-	-	36	233
II	1951	15			-	-	-	0	15
II	1952	183		20	-	-	-	20	163
II	1953	95			-	-	-	0	95
III	1955	499		24	-	-	-	24	475
III	1956	536			-	-	-	0	536
III	1957	876			-	-	-	0	876
III	1958	163			-	-	-	0	163
III	1959	0			-	-	-	0	0
III	1961	453		28	-	-	-	28	425
IV	1962	85			-	-	-	0	85
IV	1963	934		40	-	-	-	40	894
IV	1964	498			-	-	-	0	498
IV	1965	350			-	-	-	0	350
IV	1966	1092			-	-	4	4	1088
IV	1967	2375			-	-	2	2	2373
IV	1968	1604		24	-	-	-	24	1580
IV	1969	1630			-	-	-	0	1630
IV	1970	5			-	-	-	0	5
V	1971	1111			-	-	-	0	1111
V	1972	573			-	-	-	0	573
V	1973	1451			-	-	-	0	1451
V	1974	1137			-	-	-	0	1137
V	1975	741			-	-	-	0	741
V	1976	1346			-	-	-	0	1346
V	1977	1877			-	-	-	0	1877

V	1978	70			-	-	-	0	70
VI	4203	268			-	-	-	0	268
VI	4229	3627			-	-	-	0	3627
VI	4264	2281			-	-	-	0	2281
VI	4299	5693			-	-	-	0	5693
VI	4302	174			-	-	-	0	174
VI	4321	124			-	-	-	0	124
VI	4323	99			-	-	-	0	99
VI	25	248			-	-	-	0	248
VI	8	565			-	-	-	0	565
VII	4373	1746			-	-	-	0	1746
VII	4403	3063			-	-	-	0	3063
VII	4392	1996			-	-	-	0	1996
VII	4429	2391			-	-	-	0	2391
VII	4413	1164			-	-	-	0	1164
VII	4458	123			-	-	-	0	123
VIII	4464	1557			30	-	-	30	1527
VIII	4529	2123		8	167	-		175	1948
VIII	4542	2612	240	12		-	-	12	2840
VIII	4548	1530		8		-	-	8	1522
VIII	4567	1788		4	20	-	2	26	1762
VIII	4578	2483		2	204	-	-	206	2277
IX	4611	5059	1089		310	-	-	310	5838
IX	4612	1711	35		100	-	-	100	1646
IX	4633	6504	1325		245	-	-	245	7584
IX	4647	3033	72		475	-	-	475	2630
IX	4648	5155	1780		170	-	-	170	6765
X	4712	0	372					0	372
X	4728	0	387					0	387
Total		**77292**	**5300**	**228**	**1721**	**0**	**8**	**1957**	**80635**

9.8 Average Body weight (kg) since inception

Year	N	Birth	N	3 Months	N	6 Months	N	12 Months	N	18 Months	N	24 Months	N	At AFC
Female														
2001-02	14	26.86±1.04	9	62.44±3.88		-		-		-		-		-
2002-03	16	27.78±0.77	13	60.23±2.84	13	99.54±2.99	6	183.33±7.69	1	244.00±NE		-		-
2003-04	11	27.73±1.39	12	58.62±2.03	13	89.88±3.22	12	160.08±5.26	9	232.50±8.88	8	277.29±8.34		-
2004-05	20	27.82±0.75	18	60.85±1.90	26	89.07±3.60	24	165.37±3.06	16	237.75±5.93	8	299.12±9.43	9	405.33±8.08
2005-06	25	27.88±0.64	19	54.80±1.33	17	85.43±2.15	16	129.40±4.08	14	191.45±3.33	16	224.25±4.62	16	415.71±14.98
2006-07	25	28.52±0.54	24	55.00±0.77	24	76.10±1.50	16	119.55± 1.61	13	166.14± 1.93	14	217.13± 3.21		426.57 ± 7.68
2007-08	19	28.89±0.72	14	58.71±2.41	19	83.68±2.74	14	116.43± 4.77	13	159.77± 2.57	15	208.40± 4.35	15	430.47±10.81
2008-09	18	28.56±0.37	15	59.80 ± 1.85	13	84.77 ± 3.62	14	120.64± 6.25	12	162.58± 4.15	14	210.21 4.17	12	435.83 ± 6.41
2009-10	14	27.71±0.58	16	60.09±3.11	19	85.25±4.54	12	131.50±5.32	13	181.91±4.82	15	209.43±3.83	5	434.23±8.12
2010-11	12	27.54±0.76	12	59.84 ± 3.45	9	72.91 ± 3.96	10	109.09 ± 4.58	11	163.19 ± 5.09	13	205.43 ± 4.16	4	427.67 ± 9.15
2011-12	11	26.84±0.86	11	58.46±2.45	15	74.45±4.23	8	108.37±5.37	9	162.82±7.34	10	208.64±4.64	5	426.54±14.21
2012-13	12	26.80±0.82	16	59.45±2.47	22	75.95±4.25	10	110.40±5.32	8	165.50±7.30	10	212.65±4.75	4	429.50±14.40
2013-14	12	24.13±0.30	5	60.34±2.46	8	77.13±6.26	8	100.67±1.70	6	161.72±12.81	5	209.63±16.76	4	462.50±23.58
2014-15	16	21.66±0.64	11	49.41±2.33	8	64.13±3.44	4	106.5±13.92	2	214.00±4.71	5	239.25±7.27	12	440.75±15.24
2015-16	9	22.80±0.35	5	54.50±1.43	4	70.50±2.68	10	101.50±2.11	6	161.25±11.22	4	217.00±6.05	11	413.90±11.74
2016-17	15	25.20±0.31	6	59.67±1.66	3	73.00±1.89	6	104.67±2.04	8	177.50±8.23	8	214.00±3.58	32	426.47±7.90
2017-18	20	25.21±0.74	8	52.38±3.08	13	73.46±1.71	11	106.55±5.12	6	164.33±2.65	7	193.14±25.42	2	410.50±2.50
2018-19	18	24.43±0.50	11	55.45±1.55	10	70.10±3.37	9	109.56±2.72	15	153.67±3.87	8	197.25±7.64	-	
2019-20	11	24.55±0.37	7	52.04±1.91	10	67.79±1.70	10	115.37±4.88	10	169.14±4.32	12	214.73±4.06	5	443.20±17.36
2020-21	**15**	**23.45**±0.33	**12**	**55.29**±1.46	**7**	**71.71**±2.84	**5**	**119.50**±4.82	**7**	**170.36**±4.83	**11**	**202.32**±3.20	**-**	**-**
2021-22	**19**	**25.43**±0.15	**20**	**52.94**±1.11	**11**	**71.72**±1.38	**12**	**119.12**±2.85	**7**	**171.82**±4.36	**12**	**206.27**±3.83	**8**	**325.75**±7.67
Male														
2001-02	14	28.71±1.15	12	65.17±3.14	5	99.80±1.74		-		-		-		-
2002-03	11	30.18±3.57	7	63.43±5.66	8	100.38±2.34	8	164.60±3.04	4	239.75±14.92		-		-
2003-04	12	28.21±0.91	13	59.46±3.61	5	88.80±5.16	2	168.00±7.80	3	241.00±7.65	11	338.91±16.86	8	417.62±8.23
2004-05	23	27.76±0.76	17	58.39±1.70	22	90.96±1.87	14	165.33±9.56	6	239.50±7.50	9	335.31±14.21	7	479.25±75.65
2005-06	20	29.45±0.85	15	60.21±2.27	20	86.62±3.49	7	121.71±10.04	4	179.67±21.26	2	260.5±16.5	8	440.0±29.67
2006-07	13	29.85±0.80	14	55.54±1.20	14	83.73±2.10	11	116.40± 0.82	9	169.13±10.09	5	214.40±15.86		440.0± 29.67
2007-08	19	29.58±0.62	14	60.23±2.30	11	86.00±5.79	12	112.75± 6.25	10	171.20± 8.86	5	221.20±18.04	8	444.75± 6.58
2008-09	18	29.33±0.45	17	61.47 ± 1.80	12	89.42 ± 2.64	12	118.50 ±5.27	12	176.36± 3.90	7	225.71± 6.57	8	441.38±11.54
2009-10	9	27.85±0.57	9	65.86±3.39	17	91.50±4.07	10	132.50±16.6	12	183.88±8.01	5	226.74±9.34	10	439.41±16.48
2010-11	19	28.03 ±0.54	19	76.71 ± 3.17	17	69.92 ± 3.36	25	109.70±14.86	23	166.28± 6.54	21	214.49±10.91	12	436.37±17.69
2011-12	24	28.37±1.02	23	61.87±4.72	19	79.43±3.66	14	124.97±5.72	14	164.64±445	12	224.54±14.75	9	438.64±31.42
2012-13	26	28.55±1.05	28	62.80±4.75	31	80.35±3.65	22	125.45±5.25	10	170.5±4.50	8	225.75±14.80	8	445.74±31.38
2013-14	13	24.31±0.49	11	60.74±3.36	10	76.00±12.96	7	107.33±10.35	10	166.54±10.35	9	215.59±14.21	10	455.80±65.67
2014-15	19	22.38±0.65	10	52.3±2.28	8	67.81±4.70	5	153.5±14.24	2	184.00±2.83	5	224.5±10.76	10	452.60±28.64
2015-16	12	22.96±0.39	2	51.00±2.12	4	75.25±3.71	6	118.42±2.25	4	181.25±5.69	4	226.25±7.28	9	411.44±22.37
2016-17	12	25.08±0.47	4	62.50±1.03	3	91.33±5.46	5	126.40±1.51	8	202.13±5.31	5	227.60±5.14	6	446.33±20.43
2017-18	10	26.21±1.32	6	53.83±5.62	1	66.00±0.00	2	106.00±3.00	5	150.40±10.99	5	214.00±4.29	-	-
2018-19	14	24.81±0.74	10	56.60±1.65	15	70.33±1.62	4	105.00±4.95	4	158.50±4.41	2	207.50±1.50	-	-
2019-20	24	25.30±0.29	12	51.02±1.50	10	67.79±1.70	12	115.83±2.89	9	164.81±3.72	6	207.45±3.02	-	-
2020-21	**16**	**24.31**±0.24	**18**	**53.83**±1.29	**4**	**71.75**±2.69	**14**	**119.04**±2.78	**7**	**169.07**±6.86	**11**	**205.00**±4.40	**-**	**-**
2021-22	**17**	**24.35**±0.37	**15**	**55.44**±1.17	**7**	**71.34**±2.84	**7**	**120.20**±3.27	**9**	**171.82**±4.36	**13**	**203.60**±2.58		

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	N	TLMY (kg)	Lact Length (days)	SLMY (kg)	Peak Yield (kg)
1st	6	1456.38±162.14	337.00±26.60	1355.83±118.30	8.28±0.71
2nd	8	1475.28±87.78	334.00±29.41	1384.30±63.06	9.32±0.44
3rd	5	1739.03±120.19	328.75±32.88	1624.50±65.19	10.23±0.28
4th	1	1855.40	357.00	1739.90	11.20
5th & above	12	1807.68±77.04	335.80±22.13	1696.74±44.89	10.55±0.37
Overall	**32**	**1662.62±54.61**	**335.28±12.35**	**1557.38±40.83**	**9.86±0.26**

9.12.1 Average production performance of Buffaloes since Inception of Network

Year	**N**	**Av. Lact. Yield (kg)**	**Av. Lact. Length (days)**	**305 day Milk Yield (kg)**	**Av. Peak yield**
2001-02	16	1687.42 ± 110.73	315.00 ± 20.88	1606.00±95.38	9.08 ± 0.40
2002-03	28	1859.21 ± 70.84	304.68 ± 11.87	1792.70±62.60	10.23 ± 0.17
2003-04	34	1653.11 ± 42.43	278.10 ± 5.80	1645.78±41.11	10.59 ± 0.18
2004-05	36	1661.63 ± 49.10	299.10 ± 7.87	1633.26±39.73	11.13 ± 0.23
2005-06	34	1721.07 ± 72.95	292.32 ± 9.97	1667.20±62.32	11.32 ± 0.27
2006-07	41	1684.73 ±52.55	293.03 ± 5.24	1661.06 ±50.04	10.89 ± 0.31
2007-08	32	1726.25 ±72.56	303.53 ± 8.26	1649.06 ±45.70	11.17 ± 0.21
2008-09	35	1598.69 ± 51.34	337.62 ± 7.81	1491.37 ±44.77	9.75 ± 0.24
2009-10	30	1600.89 ± 64.93	328.28 ± 16.09	1551.11 ± 49.56	9.69 ± 0.38
2010-11	16	1433.91 ± 72.22	319.00 ± 17.74	1348.87 ± 72.00	9.0 ± 0.28
2011-12	21	1428.65 ± 45.49	318.76 ± 9.91	1386.12±47.16	8.82 ± 0.22
2012-13	27	1432.7 ± 50.59	296.48 ± 9.01	1390.57±41.29	9.70 ± 0.21
2013-14	24	1526.74 ± 49.26	294.30 ± 9.79	1480.64±38.21	9.58 ± 0.18
2014-15	41	1493.40 ± 53.85	294.00 ± 7.69	1443.99±60.65	9.71 ± 0.25
2015-16	20	1623.90 ± 77.97	344.85 ± 15.06	1477.38 ± 58.40	8.78 ± 0.33
2016-17	23	1670.73 ± 80.06	309.96 ± 11.28	1582.82 ± 68.74	9.68 ± 0.29
2017-18	23	1617.70 ± 72.01	282.81 ± 11.02	1586.06 ± 72.01	9.75 ± 0.24
2018-19	22	1649.38 ± 85.81	313.32 ± 15.74	1565.95 ± 64.94	9.60 ± 0.29
2019-20	25	1604.18 ± 117.29	291.65 ± 17.89	1558.62 ± 103.17	9.49 ± 0.49
2020-21	24	1633.00 ± 55.51	327.46 ± 14.12	1557.53 ± 41.34	9.56 ± 0.31
2021-22	**32**	**1662.62±54.61**	**335.28±12.35**	**1557.38±40.83**	**9.86±0.26**

9.12.2 Herd Life Production (up to 4th Lactation) during 2021-22

Ani. No.	DOB	Date of completion of 4th or more lact. or disposal	HLF (days) up to 4th or more lactation or disposal (d)	LTMY (kg)	Productive Days	Unproductive Days	MY/ day HLF
4482	01-12-2008	10-02-2022	4819	13758.10	2232	832	2.85
4501	02-08-2009	16-08-2021	4397	11490.20	2144	681	2.61
4434	29-08-2007	10-08-2021	5095	11862.70	2284	971	2.33
4549	26-09-2010	28-11-2021	4081	9107.00	1877	1006	2.23
4613	05-10-2012	16-06-2021	3176	7084.35	1108	612	2.23
4455	23-02-2008	10-11-2021	5009	10908.00	2112	1637	2.18
4520	16-07-2010	10-11-2021	4135	8839.70	1603	1016	2.14
4625	24-12-2012	24-12-2020	2922	6147.80	1183	412	2.10
4582	29-09-2011	04-06-2021	3536	7363.20	1213	891	2.08
4430	15-08-2007	11-11-2021	5202	10766.30	2047	1213	2.07
4494	10-04-2009	30-09-2020	4191	8230.00	1638	807	1.96
4466	28-08-2008	11-11-2021	4823	9295.70	1983	1405	1.93
4528	05-08-2010	20-08-2021	4033	7721.70	1544	1233	1.91
4616	25-10-2012	21-11-2021	3314	5531.10	1073	501	1.67
4513	25-09-2009	14-02-2022	4525	7094.40	1540	1206	1.57

4557	25-12-2010	10-11-2021	3973	5329.10	1485	1137	1.34
4565	10-08-2011	10-11-2021	3745	4877.80	1174	757	1.30

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. or date of disposal) Productive Days (date of first calving to total days in milk), Unproductive days (total days when buffalo not give milk from the date of first calving)

9.13 Average Milk Composition from April 2021 to March 2022

Month	N	Fat	SNF	Protein	Lactose	SCC
April 21	37	6.1	9.2	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	33	6.8	9.7	-	-	-
August	28	6.5	9.6	-	-	-
September	-	-	-	-	-	-
October	23	6.3	9.6	-	-	-
November	-	-	-	-	-	-
December	24	6.6	9.3	-	-	-
January 22	-	-	-	-	-	-
February	26	6.2	9.1	-	-	-
March	-	-	-	-	-	-
Overall	**171**	**6.43**	**9.43**	-	-	-

9.14: Reproductive Performance

Parity	AFC (Months) (N)	SP (Days)	DP (Days)	CI (Days)
1	50.86 ± 2.11 (10)	120.20 ± 30.59 (7)		
2		133.25 ± 17.88 (6)	187.40 ± 18.80 (6)	465.60 ± 37.59 (6)
3		137.50 ± 18.50 (2)	165.00 ± 8.00 (2)	411.00 ± 29.00 (2)
4		138.00 ± 46.00 (2)	140.00 ± 21.00 (2)	410.00 ± 51.00 (2)
5th& above		116.89 ± 19.17 (10)	129.00 ± 16.00 (9)	421.13 ± 29.14 (9)
Over all	**50.86 ± 2.11 (10)**	**124.41 ±11.20 (27)**	**151.71 ± 11.10 (26)**	**431.71 ± 18.30 (26)**

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (Days/ Months)	AFC months	Service Period (days)	Dry Period (days)	Calving Interval (days)
2001-02	-	-	243.92 ±42.12	250.08 ±23.75	556.17 ±24.96
2002-03	-	-	195.00 ±22.93	204.45 ±25.71	489.95 ±24.01
2003-04	1517.34 ±50.82	49.75	146.13 ±14.32	177.35 ±12.01	454.71 ±14.45
2004-05	1370.64 ±86.23	44.94	153.55 ±11.10	179.37 ±9.84	462.79 ±11.33
2005-06	1366.23 ±31.93	44.79	145.87 ±18.50	171.83 ±16.20	451.63 ±18.03
2006-07	1367.69 ±29.27	44.84	148.68 ±13.13	163.32 ±11.69	450.27 ±14.29
2007-08	1431.62 ± 22.36	46.94	150.57 ± 13.02	162.03 ± 23.45	456.11 ± 11.48
2008-09	1565.62 ± 41.18	51.33	118.27 ± 16.96	172.88 ± 15.90	480.25 ± 16.10
2009-10	1489.18 ± 29.65	48.83	203.10 ± 22.39	169.57 ± 11.58	453.30 ± 16.06
2010-11	1391.67 ± 88.97(8)	45.63	108.68±19.01(34)	193.57± 9.64(30)	503.24 ± 22.75(30)
2011-12	1461.00 ± 98.49(5)	47.90	97.11 ± 5.15(18)	141.19± 1.18(23)	425.90 ± 33.77(23)
2012-13	1448.00 ± 69.58(8)	47.47	108.6 ± 14.82(17)	164.08± 1.72(26)	441.73 ± 22.99(26)
2013-14	45.47 ± 2.62(8)	45.47	119.63± 1.84(25)	135.60± 7.83(16)	401.06 ± 11.50(16)
2014-15	47.01 ± 2.49(10)	47.01	162.28± 8.74(18)	177.2± 35.07(10)	445.9 ± 33.71(10)
2015-16	46.29(1)	46.29	169.29± 7.39(19)	192.47± 9.78(19)	483.74 ±21.03(19)
2016-17	46.21 ± 1.11 (4)	46.21	141.07± 5.25(33)	222.75± 3.27(23)	482.63 ± 32.26(23)
2017-18	50.97± 6.08 (2)	50.97	82.94 ±5.80 (30)	193.3 ±13.47 (31)	456.44± 21.45 (31)
2018-19	42.41 ± 2.71 (7)	42.41	91.60 ± 4.64 (30)	181.62 ± 18.46 (26)	423.69 ± 16.31 (26)
2019-20	45.29 ± 4.66 (8)	45.29	109.77 ± 8.86 (27)	159.38 ± 15.81 (29)	417.43 ± 13.06 (31)
2020-21	46.07 ± 4.10 (4)	46.07	145.26 ±11.13 (29)	154.83 ± 8.93 (28)	431.92 ± 9.90 (28)
2021-22	**50.86 ± 2.11 (10)**	**50.86**	**124.41 ±11.20 (27)**	**151.71 ± 11.10 (26)**	**431.71 ± 18.30 (26)**

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 21	4961.6	4414.6	531	1.5
May	4042.5	3932.1	108	0
June	3741.6	3346.8	348	0
July	4100.2	3403.8	675	2
August	4143.4	3219.6	904.5	1
September	3779.2	2832.3	922.5	0
October	3977.3	3340.1	601.5	2
November	3714.8	3163.3	522	1.5
December	3857.1	3030.3	798	1.5
January 22	4028.7	3230	777	0
February	3299.4	2680.1	585	1.5
March	3933.3	3188.8	720	0
Total	47579.1	39781.80	7492.50	11.00

9.16 Feed and fodder (Quintals) availability

Quarter	Type of fodder /feed	Qty produced at farm	Qty. Purchased	Actually fed	Balance (Qt)
I (April - June)	Green	0	257.59	257.59	0
	Dry	0	1448.1	485	963.1
	Silage	0	0	0	0
	Concentrate	0	536.27	257.270	279
II (July - September)	Green	0	0	0	0
	Dry	0	0	674.5	-674.5
	Silage	0	0	0	0
	Concentrate	0	1.56	277.56	-276
III (October – Dec.)	Green	0	0	0	0
	Dry	0	147.1	672.5	-525.4
	Silage	0	0	0	0
	Concentrate	0	476.504	276	200.504
IV (January - March)	Green	0	232.9	232.9	0
	Dry	0	324.35	450	-125.65
	Silage	0	0	0	0
	Concentrate	0		258	-258
TOTAL	Green	0	490.49	490.49	0
	Dry	0	1919.55	2282	-362.45
	Silage	0	0	0	0
	Concentrate	0	1014.334	1068.830	-54.496

9.17: Milk performance during April 2021 to March 2022

Month	**Buffaloes in milk**	**Buffaloes dry**	**Total**	**% in milk**	**Wt. Avg.(kg)**	**Herd Avg.(kg)**
April 21	754	420	1174	64.22	6.58	4.23
May	782	477	1259	62.11	5.17	3.21
June	731	532	1263	57.88	5.12	2.96
July	748	571	1319	56.71	5.48	3.11
August	758	623	1381	54.89	5.47	3.00
September	717	633	1350	53.11	5.27	2.80
October	801	643	1444	55.47	4.97	2.75
November	711	530	1241	57.29	5.22	2.99

December	726	528	1254	57.89	5.31	3.08
January 22	801	541	1342	59.69	5.03	3.00
February	740	498	1238	59.77	4.46	2.67
March	878	507	1385	63.39	4.48	2.84
Overall	**9147**	**6503**	**15650**	**58.45**	**5.20**	**3.04**

9.17.1 Milking performance since inception

Year	No. of Animal in Milk	No. of Animal dry	Total Animal	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2001-02	4298	6652	10950	39.25	6.92	2.72
2002-03	7946	4190	12136	65.47	5.9	3.86
2003-04	10560	4946	15506	68.1	5.99	4.08
2004-05	8731	4717	13448	64.92	6.19	4.02
2005-06	12536	7623	20159	61.69	5.66	3.49
2006-07	12299	8306	20605	59.69	5.64	3.37
2007-08	10057	7717	17774	56.58	5.7	3.23
2008-09	8975	7124	16099	55.75	5.48	3.06
2009-10	10119	7668	17787	56.55	4.27	2.42.
2010-11	9072	6836	15908	58.39	4.48	2.73
2011-12	8501	5212	13713	63.29	4.66	3.02
2012-13	8281	4412	12693	65.24	5.15	3.36
2013-14	8181	4701	12882	63.51	5.11	3.25
2014-15	10214	4639	14853	68.77	4.69	3.22
2015-16	6422(21)	6986(16)	13408(39)	47.9	5.13	2.43
2016-17	7057(25)	5936(13)	12993(38)	54.31	5.22	2.83
2017-18	8138 (48)	4784 (42)	12922 (39)	62.98	5.55	3.43
2018-19	8771 (55)	5046 (33)	13817 (41)	63.48	5.38	3.42
2019-20	8750 (63)	5183	13933	62.80	5.11	3.21
2020-21	8347 (68)	6187 (29)	14534 (45)	57.43	5.14	2.95
2021-22	**9147 (73)**	**6503 (32)**	**15650 (61)**	**58.45**	**5.20**	**3.04**

9.18: Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
1948	1	2	1	-
1950	2	2	4	-
1952	2	-	1	1
1955	3	1	1	1
1956	3	-	-	1
1961	3	1	1	-
1963	4	1	-	-
1968	4	3	-	-
4203	6	-	-	1
4321	6	-	-	1
4413	7	-	-	1
4464	8	-	-	1
4497	8	-	1	-
4529	8	1	-	-
4548	8	1	-	-
4567	8	2	-	-
4578	8	2	1	-
Total		**16**	**10**	**7**

9.19 Bull wise daughters completing 1st lactation Farm (2021-22)

S. No.	Bull No.	Daughters number	Date of birth	Date of calving	AFC (months)	Lactation length day	TLMY (kg)	SLMY (kg)
1	1952	4724	12-08-2016	31-08-2020	48.52	239	929.2	929.20
2	1955	4748	15-07-2017	18-09-2020	38.07	260	963.8	963.80
3	1956	4721	28-07-2016	18-11-2020	51.61	223	907.2	907.20
4	4203	4681	12-09-2014	04-09-2020	71.61	316	1321.3	1309.70
5	4321	4703	04-09-2015	06-09-2020	59.97	358	1682.5	1567.60
6	4413	4671	06-07-2014	20-10-2020	75.34	414	1857.9	1582.20
7	4464	4771	08-11-2017	26-10-2021	47.48	78	245.5	245.50

9.20 Breeding bulls Selected for current set (X Set)

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	4712	31-10-2015	4446	1950	2091.6
2	4728	09-09-2016	4430	1948	1742.6
3	4764	06-10-2017	4613	1955	1628.0
4	4765	11-10-2017	4520	1963	2061.4
5	4768	25-10-2017	4405	1955	1856.5
6	4772	23-11-2017	4482	1950	2070.8

9.20.1 PT Bulls for nominated mating

Bull No.	Set No.	Centre	Dams' Best yield	Sire Index	Breeding Value	% Superiority
1963	4	Livestock Research Station, Vallabhnagar	2534.0	1	1486.29	16.20
1968	4		2395.0	2	1301.86	3.78
1976	5		2252.0	2	1468.63	8.88
1977	5		1950.0	1	1538.38	10.05

9.20.2 List of Future breeding bulls (proposed for XI Set and XII Set)

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dams best SLMY (kg) / Parity	Exp. predicted Difference (EPD)
1	4777	25-07-2018	4659	4578	1627.2/I	25.84
2	4778	28-07-2018	4600	4548	1667.0/I	46.95
3	4791	05-09-2018	4672	4567	1538.6/II	37.27
4	4807	13-06-2019	4405	1955	1856.5/V	74.87
5	4809	06-08-2019	4599	1952	1822.7/I	57.96
6	4825	16-09-2019	4632	1963	1685.2/I	39.99
7	4827	24-09-2019	4466	1968	1404.6/III	111.3
8	4829	14-10-2019	4537	1955	1853.4/II	50.94
9	4839	22-12-2019	4520	1963	2061.4/IV	104.88
10	4840	27-12-2019	4659	1952	1627.2/II	25.84
11	4850	28-09-2020	4466	1968	1404.6/III	111.3
12	4851	01-10-2020	4613	1955	1628.0/III	23.98
13	4863	26-11-2020	4600	1950	1667.0/I	46.95
14	4868	21-12-2020	4537	1955	1853.4/II	50.94

9.21 Target achieved during the year

Trait	Target	2018-19	2019-20	2020-21	2021-22
Av. Age at first calving (months)	40	42.41 ± 2.71 (7)	45.29 ± 4.66 (8)	46.07 ± 4.10 (4)	50.86 ± 2.11 (10)
Av. Service period (days)	130	92 ± 4.64 (30)	110 ± 8.86 (27)	145 ±11.13 (29)	124 ±11.20 (27)
Calf mortality (0-3 months)	≤ 3 %	26.47 %	31.58	2.5 %	24.5 %
Wet average (kg)	≥8.5 kg	5.38	5.11	5.14	5.20
Herd average (kg)	≥5.5 kg	3.42	3.21	2.95	3.04

10. Salient Research Achievements:

Five Set of bulls **complete**ly evaluated with 7424 doses of Proven Surti Bulls. Test mating from IX set completed. Test mating of X set underway. Training of bulls for XI set started.

11. Publications:

12. Socioeconomic impact / Success stories:

The supply of high pedigreed test bulls as well as semen of test bulls and progeny tested bulls has helped in improving the scenario of Dairy Farming in the region. Farmers of the region are showing interest towards buffalo rearing for milk production as evident from positive growth rate of buffaloes in comparison to cattle in addition; Buffalo contributed more than 90% of total income from livestock, indicating importance of buffalo in socio economy of farmers in the region

13. Constraints if any : For strengthening of field testing programme:

- Recurring contingency is short to meet out the increased cost of feed and fodder, labour, medicine and liquid nitrogen.
- Training programmes may be organized for the buffalo keepers with the provision of sufficient fund for the same.
- Provision for 6 posts of inseminators on fixed wages of Rs. 8000 pm. (Rs.5.76 Lacs/year)
- Atleast Rs 6.0 lacs for incentives to the registered farmers in terms of vaccination, deworming, mineral mixture supply and organizing treatment camps and events.
- Provision of 2 motorcycles for efficient supervision of field unit centers costing Rs. 2.0 lacs

14. Focus of work in the coming year

Field unit

- Strengthen progeny testing programme in the field.
- Identify elite buffaloes in farmers herd for nominated mating.
- Treatment camps and animal competition will be organised at all the field centres to get better cooperation of farmers.
- Procure male calves born from nominated mating at farmers herd.
- Survey of socio economic parameters of registered farmers will be under taken seasonally.
- Increasing the foot-print of the project by opening new centers.

Institutional herd

- Preserve required number of doses of **X set** of bulls.
- To preserve doses of XI set of bulls
- Efforts will be made to further increase reproductive and productive efficiency of herd.
- Conduct studies

Field Unit, Surti (RAJUVAS)

F 1. Herd Strength of Registered Females at Field Unit Centers during 4/2021 to 3/2022

Center	Opening balance	Addition			Deduction			Closing balance
		Birth	Purchased	New Reg.	Sold	Death	Reg. Cancelled	
Menar	578	48	0	0	47	16	0	563
Rundera	517	23	5	0	43	18	0	484
Navania	722	41	13	0	70	30	0	676
Tarawat	383	32	3	0	25	13	0	380
Dhamania	695	49		0	48	9	0	687
Total	**2895**	**193**	**21**	**0**	**233**	**86**	**0**	**2790**

F 2. Status of Breedable Females at Different Field Unit Centers during 4/2021 to 3/22

Center	Heifers >3 years		Buffalo Non Pregnant		Buffalo Pregnant	
	Total	Pregnant	In milk	Dry	In milk	Dry
Menar	91	14	121	26	5	62
Rundera	83	32	97	18	34	80
Navania	67	29	124	3	47	44
Tarawat	45	20	104	13	30	44
Dhamania	103	46	127	9	62	101
Total	**389**	**141**	**573**	**69**	**178**	**331**

F 3. Monthly AI (Center-wise) at Different Field Unit Centers during 4/2021 to 3/2022

Month	**Centre**					**Total**
	Menar	**Rundera**	**Navania**	**Tarawat**	**Dhamania**	
Apr-21	11	21	11	4	2	**49**
May	5	23	1	0	0	**29**
June	12	20	4	0	0	**36**
July	24	48	11	5	28	**116**
August	28	62	29	12	61	**192**
September	27	65	44	18	43	**197**
October	13	68	40	18	18	**157**
November	29	70	44	15	19	**177**
December	35	75	39	8	32	**189**
January-22	26	68	22	8	25	**149**
February	14	54	23	6	16	**113**
March	12	35	18	3	8	**76**
Total	**236**	**609**	**286**	**97**	**252**	**1480**

F 4. Bull-wise AI at Different Field Unit Centers during the Period 4/2021 to 3/2022

Month	**Bull No.**								**Total**
	4464	**4529**	**4542**	**4548**	**4567**	**4578**	**4633**	**4648**	
April-21	3	0	0	0	11	14	21	0	**49**
May	6	0	0	0	0	0	23	0	**29**
June	12	0	0	0	4	0	20	0	**36**
July	0	0	0	35	28	48	0	5	**116**
August	49	0	0	66	3	62	0	12	**192**

September	30	0	0	73	11	83	0	0	**197**
October	121	0	0	13	18	5	0	0	**157**
November	123	0	0	49	5	0	0	0	**177**
December	23	0	52	39	75	0	0	0	**189**
January-22	0	23	38	68	20	0	0	0	**149**
February	0	53	0	60	0	0	0	0	**113**
March	0	23	35	3	15	0	0	0	**76**
Total	**367**	**99**	**125**	**406**	**190**	**212**	**64**	**17**	**1480**

F 5. Month-wise Conception at Field Unit Centres during 2021

Month	**Centre**					**Total**
	Menar	**Rundera**	**Navania**	**Tarawat**	**Dhamania**	
January-21	6	17	12	4	15	54
February	9	22	12	2	9	54
March	5	13	9	1	11	39
April	4	8	3	1	0	16
May	2	5	0	0	0	7
June	3	5	1	0	0	9
July	7	14	2	2	14	39
August	8	24	4	5	24	65
September	7	21	15	7	16	66
October	5	28	6	5	7	51
November	7	32	21	6	7	73
December	7	30	17	3	10	67
Total	**70**	**219**	**102**	**36**	**113**	**540**

F 6. Month-wise Calving at Different Field Unit Centres during the Period 4/2021 to 3/2022

Month	Centre										Total	
	Menar		Rundera		Navania		Tarawat		Dhamania			
	M	F	M	F	M	F	M	F	M	F	M	F
April-21	3	2	0	0	2	1	1	0	2	1	**8**	**4**
May	4	2	6	4	0	0	3	1	2	1	**15**	**8**
June	3	4	8	7	3	3	2	3	10	6	**26**	**23**
July	7	4	7	8	4	9	3	3	7	8	**28**	**32**
August	3	5	5	7	4	4	4	5	7	6	**23**	**27**
September	3	3	6	5	3	7	4	2	10	5	**26**	**22**
October	3	1	4	5	9	2	1	1	7	4	**24**	**13**
November	2	3	7	5	1	4	1	2	7	6	**18**	**20**
December	4	3	8	6	5	3	2	0	3	5	**22**	**17**
January-22	2	2	4	2	2	2	1	0	4	4	**13**	**10**
February	2	2	3	4	1	0	1	0	1	0	**8**	**6**
March	2	0	4	3	0	0	0	0	0	0	**6**	**3**
Total	**38**	**31**	**62**	**56**	**34**	**35**	**23**	**17**	**60**	**46**	**217**	**185**

F 7. Bull-wise Conception at Different Field Unit Centres during 2021

Month	Bull No.								Total
	4464	4529	4611	4633	4647	4648	4567	4578	
January-21	0	4	0	27	0	0	6	17	**54**
February	0	2	0	13	0	17	0	22	**54**
March	3	1	0	0	0	22	0	13	**39**
April	0	12	1	0	0	3	0	0	**16**
May	0	5	2	0	0	0	0	0	**7**
June	0	0	3	0	0	1	0	5	**9**
July	0	14	0	0	13	10	2	0	**39**
August	0	24	20	0	16	0	5	0	**65**
September	0	28	8	0	27	3	0	0	**66**
October	0	0	39	0	5	7	0	0	**51**
November	0	0	55	0	16	2	0	0	**73**
December	0	0	14	13	10	30	0	0	**67**
Total	**3**	**90**	**142**	**53**	**87**	**95**	**13**	**57**	**540**

F 8. Bull-wise Calving at Different Field Unit Centres during the period 4/2021 to 3/2022

Month	Bull No																		Total	
	4464		4529		4542		4548		4567		4578		4633		4611		4648			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
April-21	2	1	0	0	0	0	2	1	3	2	1	0	0	0	0	0	0	0	**7**	**4**
May	2	1	4	1	0	0	0	0	0	1	9	5	0	0	0	0	0	0	**6**	**3**
June	7	3	17	14	0	3	0	0	2	3	0	0	0	0	0	0	0	0	**26**	**23**
July	0	0	24	28	1	1	0	0	0	0	3	3	0	0	0	0	0	0	**25**	**29**
August	0	0	7	6	7	9	0	0	3	3	6	9	0	0	0	0	0	0	**17**	**18**
September	0	0	3	1	10	5	0	0	7	11	6	5	0	0	0	0	0	0	**20**	**17**
October	0	0	1	1	0	0	0	0	3	1	0	0	20	11	0	0	0	0	**4**	**2**
November	0	0	1	2	0	0	0	0	2	3	1	4	14	11	0	0	0	0	**3**	**5**
December	0	0	7	3	0	0	0	0	0	0	0	0	13	13	0	0	2	1	**9**	**4**
Jan.,2022	0	0	3	2	0	0	0	0	0	0	4	2	0	0	0	0	6	6	**9**	**8**
February	0	0	2	0	0	0	0	0	0	0	3	4	0	0	0	0	3	2	**5**	**2**
March	0	0	0	0	0	0	0	0	0	0	4	3	0	0	2	0	0	0	**0**	**0**
Total	**11**	**5**	**69**	**58**	**18**	**18**	**2**	**1**	**20**	**24**	**37**	**35**	**47**	**35**	**2**	**0**	**11**	**9**	**217**	**185**

F 9. Bull-wise Live Female Progeny at Different Field Unit Centres (0-6M) as on 3/2022

Centre	Bull No.							Total
	4529	4542	4548	4567	4578	4633	4648	
Menar	0	0	0	4	0	3	2	**9**
Rundera	0	0	0	0	9	13	0	**22**
Navania	0	0	0	0	0	9	10	**19**
Tarawat	3	0	2	5	0	0	0	**10**
Dhamania	0	1	0	0	0	10	3	**14**
Total	**3**	**1**	**2**	**9**	**9**	**35**	**15**	**74**

F 10. Bull-wise Live Female Progeny at Different Field Unit Centres (6-12M) as on 3/2022

Center	Bull No.					Total
	4529	4578	4567	4542	4464	
Menar	5	0	5	7	0	**17**
Rundera	15	10	0	0	0	**25**
Navania	12	0	5	0	0	**17**
Tarawat	1	5	7	0	0	**13**
Dhamania	9	0	0	8	4	**21**
Total	**42**	**15**	**17**	**15**	**4**	**93**

F 11. Bull-wise Live Female Progeny at Different Field Unit Centres (1-3 yrs) as on 3/2022

Center	Bull No.						Total
	4464	4529	4542	4548	4567	4578	
Menar	7	4	11	4	9	12	**47**
Rundera	18	26	15	6	14	27	**106**
Navania	10	6	10	12	2	16	**56**
Tarawat	2	3	2	5	2	8	**22**
Dhamania	4	14	12	7	18	0	**55**
Total	**41**	**53**	**50**	**34**	**45**	**63**	**286**

F 12. Bull-wise Live Female Progeny at Different Field Unit Centres (>3 yrs) as on 3/2022

Centre	Bull No.												Total
	4373	4392	4413	4429	4458	4464	4529	4542	4548	4567	4578	4497	
Menar	2	0	1	1	5	3	2	3	0	8	7	1	**33**
Rundera	2	2	2	1	3	2	12	6	7	6	7	0	**50**
Navania	0	0	0	0	13	1	2	2	0	19	1	0	**38**
Tarawat	0	0	0	0	0	0	0	0	5	5		0	**10**
Dhamania	0	0	0	2		2	17	2	6	10	7	0	**46**
Total	**4**	**2**	**3**	**4**	**21**	**8**	**33**	**13**	**18**	**48**	**22**	**1**	**177**

F 12.1. Center and Age-wise Live female Progeny as on 3/2022

Center	Age				Total
	0-6M	6-12M	1-3yr	>3yr	
Menar	9	17	47	33	**106**
Rundera	22	25	106	50	**203**
Navania	19	17	56	38	**130**
Tarawat	10	13	22	10	**55**
Dhamania	14	21	55	46	**136**
Total	**74**	**93**	**286**	**177**	**630**

F 13. Bull-wise Daughters Calved at Different Field Unit Centers during 2020-21

Bull No.	Center					Total
	Menar	Rundera	Navania	Tarawat	Dhamania	
4299	0	1	0	0	0	**1**
4373	0	1	0	0	1	**2**
4392	1	2	0	1	0	**4**
4403	0	0	0	0	2	**2**
4413	0	4	1	0	0	**5**
4429	4	1	0	0	3	**8**
4458	1	0	4	3	4	**12**
4464	1	1	0	1	0	**3**
4497	0	0	0	0	2	**2**
4529	1	0	3	0	0	**4**
4542	2	0	0	0	0	**2**
4567	0	0	2	1	0	**3**
4578	0	2	0	2	2	**6**
Total	**10**	**12**	**10**	**8**	**14**	**54**

F 14. Bull-wise Daughters Recorded at Different Field Unit Centres during 2021-22

Bull No	Daughters recorded					Total
	Menar	Rundera	Navania	Tarawat	Dhamania	
4203				1		1
4229		1				1
4299			1			1
4392	1				1	2
4264		2	1			3
4403					2	2
4373	1				4	5
4429	2		3		4	9
4294						0
4497	1					1
4413	1	5	1	2		9
4473						0
4458	1		1		1	3
4529				1		1
4567			2			2
Total	**7**	**8**	**9**	**4**	**12**	**40**

F 15. Bull wise AI, Conception, Calving and Daughters Retained till completion of milk recording during the year

Bull No. / Set No.	Total AI	Conception	Calving		Daughters retained up to				
			Total	Female	1 year	2 year	3 years	Calving	recording
1948/I	43	11	8	2	0	0	0	1	1
1949/I	0	0	0	0	0	0	0	2	2
1950/II	2	0	0	0	0	0	0	2	2
1951/II	87	26	17	10	0	0	0	1	1
1952/II	58	12	12	8	0	0	0	0	0
1953/II	50	12	8	1	0	0	0	1	1
1954/II	65	13	10	4	0	0	0	1	1
1955/III	499	105	84	38	0	0	0	18	17
1956/III	523	128	86	35	0	0	0	18	16
1957/III	952	183	157	60	0	0	0	20	17
1958/III	572	135	108	46	0	0	0	16	15
1959/III	573	141	112	58	0	0	0	19	17
1960/III	15	4	1	0	0	0	0	0	0
1961/III	705	187	142	59	0	0	0	22	20
1962/III	88	13	9	5	0	0	0	2	2
1963/IV	842	222	168	70	0	0	0	14	13
1964/IV	489	144	118	54	0	0	0	15	14
1965/IV	578	152	120	49	0	0	0	10	9
1966/IV	373	80	72	36	0	0	0	14	12
1967/IV	423	112	77	33	0	0	0	10	9
1968/IV	752	222	178	79	0	0	0	15	14
1969/IV	950	270	221	86	0	0	0	15	14
1970/IV	130	34	24	12	0	0	0	3	3
1971/V	336	93	76	31	25	20	15	10	7
1972/V	363	117	90	37	35	28	18	12	9
1973/V	388	122	108	43	37	33	28	10	9
1974/V	877	296	230	94	68	60	53	25	22
1975/V	954	298	235	105	86	76	75	18	13
1976/V	1322	401	328	134	114	92	75	16	9
1977/V	1490	469	379	157	121	103	88	24	17
1978/V	1821	634	507	222	187	160	127	35	20
4203/VI	935	322	247	101	85	78	46	18	17
4229/VI	1776	571	423	185	164	139	120	27	27
4264/VI	1579	514	396	174	149	125	116	29	26
4299/VI	1477	466	343	153	127	105	84	26	20
4302/VI	543	176	129	57	49	46	35	6	6

4321/VI	226	67	49	22	18	16	12	2	2
4323/VI	359	95	89	38	32	28	19	3	3
4373/VII	587	195	145	59	42	22	16	13	10
4392/VII	623	189	148	58	39	31	25	10	8
4403/VII	1130	362	267	92	65	44	37	24	21
4413/VII	889	289	227	91	75	45	34	20	14
4429/VII	640	197	148	66	54	44	35	26	18
4458/VII	574	170	134	51	40	17	9	16	3
4497/VII	451	126	88	33	25	12	3	7	5
4464/VIII	871	256	183	79	24	16	2	3	0
4529/VIII	2028	654	451	189	45	0	0	5	1
4542/VIII	927	272	237	106	8	0	0	2	0
4548/VIII	1021	330	275	121	12	0	0	0	0
4567/VIII	1554	480	397	178	32	0	0	5	2
4578/VIII	1668	544	411	184	24	0	0	6	0
4611/IX	367	142	2	0	0	0	0	0	0
4612/IX	99	0	0	0	0	0	0	0	0
4633/IX	462	84	82	35	0	0	0	0	0
4647/IX	406	87	0	0	0	0	0	0	0
4648/IX	320	95	20	9	0	0	0	0	0
TOTAL	**37832**	**11319**	**8576**	**3649**	**1782**	**1340**	**1072**	**617**	**489**

Performance of FPT Programme since Inception

Duration	AI	Pregnancies	CR%	Calvings	Females Born	Daughters Recorded	Av. AFC (months)	Av. Milk Yield (kg/day)	Daughters Due for Recording
2001-02	2256	477	21.14	393	165	53	67.62	4.15	
2002-03	1850	472	25.51	362	159	49	58.73	3.86	0
2003-04	1980	471	23.79	352	167	51	66.73	4.29	0
2004-05	1861	551	29.61	445	186	29	62.95	3.95	0
2005-06	1717	536	31.22	446	170	33	56.31	4.16	0
2006-07	1637	506	30.91	411	162	38	58.76	4.42	0
2007-08	1811	542	29.93	420	184	22	53.18	5.09	0
2008-09	1804	604	33.48	502	218	15	61.87	4.76	0
2009-10	1975	671	33.97	529	224	18	53.01	4.49	0
2010-11	2038	681	33.42	458	203	18	57.12	5.24	0
2011-12	2023	520	25.70	475	226	20	61.19	5.41	0
2012-13	1897	583	30.73	497	198	23	54.07	5.41	0
2013-14	1591	555	34.88	410	158	41	59.65	4.98	0
2014-15	1534	455	29.66	409	156	46	55.79	4.89	4
2015-16	1986	556	28.00	345	145	26	46.33	5.02	12
2016-17	1979	622	31.43	460	176	4	39.99	5.15	55
2017-18	1478	506	34.24	453	188	1	27.08	4.57	109
2018-19	1719	485	28.21	397	173	0	-	-	140
2019-20	1538	539	35.05	409	183	0	-	-	142
2020-21	1678	456	27.18	409	177	0	-	-	161
2021-22	1480	540	36.49	402	185	0	-	-	7
Overall	**37,832**	**11,328**	**29.94**	**8,984**	**3,803**	**487**	**59.00**	**4.57**	**630**

AI, Conception, Calvings and Daughters Retained (Set wise) 1st set

Particular	Bull No		
	1948	1949	Total
AI	43	2	45
Pregnancies	20	2	22
Daughters Born	6	2	8
Daughters Calved	1	2	3
Complete Recording	1	2	3
Daughters Available	-	-	-

AI, Conception, Calvings and Daughters Retained (Set wise) 2nd set

Particular	Bull No					
	1950	1951	1952	1953	1954	Total
AI	2	87	58	50	65	262
Pregnancies	2	20	18	12	13	65
Daughters Born	2	10	8	1	4	25
Daughters Calved	2	1	0	1	1	5
Complete Recording	2	1	0	1	1	5
Daughters Available	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained – 3nd Set

Particular	Bull No								
	1955	1956	1957	1958	1959	1960	1961	1962	Total
AI	499	523	952	572	573	15	705	88	3927
Pregnancies	105	128	183	135	141	4	187	13	896
Daughters Born	38	35	60	46	58	0	60	5	302
Daughters Calved	18	18	20	16	19	-	22	2	115
Complete Recording	17	16	17	15	17	-	20	2	104
Daughters Available	-	-	-	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained 4th Set

Particular	Bull No								
	1963	1964	1965	1966	1967	1968	1969	1970	Total
AI	842	489	578	373	423	752	950	130	4537
Pregnancies	222	144	152	80	112	222	270	34	1236
Daughters Born	70	54	49	36	33	79	86	12	419
Daughters Calved	14	15	10	14	10	15	15	3	96
Complete Recording	13	14	9	12	9	14	14	3	88
Daughters Available	-	-	-	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained –5th Set

Particular	Bull No								
	1971	1972	1973	1974	1975	1976	1977	1978	Total
AI	336	363	388	877	954	1322	1490	1821	7551
Pregnancies	93	117	122	296	298	401	469	634	2430
Daughters Born	31	37	43	94	106	135	157	222	825
Daughters Calved	10	12	10	25	18	16	24	35	150
Complete Recording	7	9	9	22	13	9	17	20	106
Daughters Available	-	-	-	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained –6th Set

Particular	Bull No							Total
	4203	4229	4264	4299	4302	4321	4323	
AI	935	1776	1579	1477	543	226	359	6895
Pregnancies	322	571	514	466	176	67	95	2211
Daughters Born	101	180	174	153	57	22	38	725
Daughters Calved	18	27	29	26	6	2	3	111
Complete Recording	17	27	26	20	6	2	3	101
Daughters Available	-	-	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained –7th Set

Particular	Bull No							Total
	4373	4392	4403	4413	4429	4458	4497	
AI	587	623	1130	869	640	574	451	4874
Pregnancies	195	189	362	289	197	170	126	1528
Daughters Born	60	58	92	91	66	51	33	451
Daughters Calved	13	10	24	20	26	16	7	116
Complete Recording	10	8	21	14	18	3	5	79
Daughters Available	4	2	0	3	4	3	1	17

AI, Conception, Calvings and Daughters Retained –8th Set

Particulars	Bull No.						Total
	4464	4529	4542	4548	4567	4578	
AI	871	2028	927	1085	1554	1604	8069
Pregnancies	256	654	272	330	480	544	2536
Daughters Born	81	189	106	121	178	184	859
Daughters Calved	3	5	2	0	5	6	21
Complete Recording	0	1	0	0	2	0	3
Daughters Available	53	131	79	72	119	109	563

AI, Conception, Calvings and Daughters Retained –9th Set

Particulars	Bull No.					
	4611	4612	4633	4647	4648	Total
AI	367	99	462	406	320	1654
Pregnancies	142	0	84	87	95	408
Daughters Born	35	0	0	0	9	44
Daughters Calved	0	0	0	0	0	0
Complete Recording	0	0	0	0	0	0
Daughters Available	0	0	35	0	15	50

Set wise AI, Conception and daughters retained

Set No.	No. of Bulls	AI	Preg	Calving		Daughters Retained						
				Total	F	Up to 1Year	Up to 2 Year	Up to 3 Year	Daughters Recorded	Av. AFC (month)	Av. Milk Yield (kg/day)	Daughters to be Recorded
1	2	45	22	18	8	3	3	3	3	58.96/3	5.53	-
2	5	262	65	54	25	5	5	5	5	58.49/5	4.29	-
3	8	3927	896	700	302	115	115	115	104	34.48/104	4.01	-
4	8	4537	1236	978	419	96	96	96	88	61.89/88	4.12	0
5	8	7551	2430	1956	825	673	572	479	106	57.65/106	4.59	-
6	7	6895	2211	1671	725	624	537	432	101	59.12/101	5.32	0
7	7	4874	1528	1161	451	340	215	159	79	52.53/79	5.02	17
8	6	8069	2536	1957	859	145	16	3	3	39.29/3	5.53	563
9	5	1654	408	104	44	-	-	-	0	0	-	50

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Allocation as per R E 2021 – 22		Released	Expenditure as AUC		Closing Balance
Total	ICAR Share	ICAR Share	ICAR Share	State Share	(ICAR Share)
62.00	43.50+4.0* (SCSP)	43.50+4.00* (SCSP)	47.49250	14.49750	0.00750

Herd Performance

Herd strength was 137 out of which 70 were breedable buffaloes (>2year). During the period 36 calving took place consisting of 19 males, 17 females. The calf mortality (0-3 months) was 24.5 % which is very high the target of NPBI ≤ 3 %. Conception rate was improved to 40.35% from last year 35.96 %. During the report period 5300 semen doses were produced, 1957 doses were used in NPBI/Field/sold to farmers and 80635 frozen semen doses is available in stock.

Production performances indicated by average lactation milk yield during the year was 1662.62 kg (32) increased from 1633.00 kg (24), 305 day or less day milk yield 1557.38 kg (32) slightly decresed from 1557.53 kg (24). Lactation length was 327 days (24). The reproductive traits viz. AFC, SP, DP and calving interval were 50.86 months (10), 124 days (27), 152 days (26) and 432 days (26) respectively. The wet and herd average 5.20 kg and 3.04 kg during the year as compared to last year 5.14 kg and 2.95 kg, respectively. 58.45 percent buffaloes were in milk during the report period.

Field Unit:

1480 AI's were performed utilization from the semen of 8 bulls (6 from VIII & 2 from IX set) in 5 centers/villages. Total 540 conceptions reported with conception rate of 36.49 %. 185 female progenies born out of 402 calving and 40 daughters completed lactation in 2021-22.

Accomplishment and Targets Achieved:

Trait	Target	2018-19	2019-20	2020-21	2021-22
Av. Age at first calving (months)	40	42.41 ± 2.71 (7)	45.29 ± 4.66 (8)	46.07 ± 4.10 (4)	50.86 ± 2.11 (10)
Av. Service period (days)	130	92 ± 4.64 (30)	110 ± 8.86 (27)	145 ±11.13 (29)	124 ±11.20 (27)
Calf mortality (0-3 months)	≤ 3 %	26.47 %	31.58	2.5 %	24.5 %
Wet average (kg)	≥8.5 kg	5.38	5.11	5.14	5.20
Herd average (kg)	≥5.5 kg	3.42	3.21	2.95	3.04

Recommendations:

- Concerted efforts should be made to improve milk production traits. In the past many years milk production traits remained more or less same.
- Conception rate is increased at main unit and FPT still intensive efforts need to improve.
- Needs to increase production of frozen semen doses and AI in field.
- Calf mortality is very high and need to restrict within NPBI limit.

ICAR-INDIAN GRASSLAND AND FODDER RESEARCH INSTITUTE, JHANSI

1. **Name of Centre** : IGFRI, Jhansi
2. **Project Code** : 17810170002
3. **Project Title** : Performance recording and improvement of Bhadawari Buffaloes
4. **Date of Start** : 1.04.2001
5. **Objectives** :
   - To establish elite herd of 50 to 100 Murrah (at each center) / Nili Ravi / 50 Bhadawari / 50 Surti / 70 Jaffarabadi for the production of genetically superior young bulls.
   - To evaluate sires through institutional / associated herd/field progeny testing
   - To produce, test, propagate and conserve high genetic merit male germplasm

6. **Technical Programme** :
   - Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 100 and 50 breedable females.
   - Selection and testing of minimum 4-6 breeding bulls in every 24 months cycle.
   - Production of minimum 3000 to 5000 (Other breeds) frozen semen doses from each test bull.
   - Maintain a minimum number of 2000 (Bhadwari) frozen semen doses until the particular SET gets evaluated.
   - Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
   - Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
   - Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4^{th} or more lactation). New Table
   - Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
   - Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
   - Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. **Staff associated with the project**:

Discipline	**Name of Scientist / Staff**	**Status PI/Co-PI/ Associated)**
AGB	Dr. B P Kushwaha	PI
ARGO		
ANFT	Dr. Sultan Singh	Co-PI
LPM	Dr. Deepak Upadhyay	CP-PI (Since November 2018)
Health / Others		
No. of staff		
Technical staff		
Contractual staff (RA / SRF / YP-I, YP-II)	1 (SRF)	

8. **Financial Statement** : Head wise budget allocation and utilization; revenue receipts

Expenditure head		Budget allotted	Expenditure incurred dur financial year 2021-22	Balance
A) Recurring				
General		41.00	40.91826	0.08174
SCSP		2.00	01.99000	0.01000
Sub Total		43.00	42.90826	0.09174
B) Non-recurring				
	Equipment	Nil	0.00	2.50
	Works	Nil	0.00	0.00
Sub Total		0.00	0.00	0.00
Grand Total		43.00	42.90826 (Rupees Forty-Two Lakhs Ninety Thousand Eight Hundred Twenty Six only.)	0.09174

Revenue generation during 2021-22

S.No.	**Item**	**Revenue generated (Rs.)**
1	Animal sale	96,700
2	Milk Sale	13,33,461
	Total	**14,30,161**

9.1 Herd Strength during the Period 1st April 2021 to 31st March, 2022

Sr. No.	Category	**Addition**			**Disposal**				**CB**
		OB	**B / P**	**T**	**D**	**T**	**S**	**E**	**CB**
	Female								
1.	Below 3 months	0	13	-	-	10	-	-	3
2.	3-12 months	7	-	10	-	7	-	-	10
3.	1-2 years	9	-	7	-	9	-	-	7
	Above 2 years	10	-	9	-	11	-	-	8
4.	Buffaloes in Milk	23	-	11	1	-	1		32
5.	Buffaloes Dry P /NP	22	-	-	-	-	1		21
	Sub Total	71	13	37	1	37	2		81
	Males								
1.	Below 3 months	1	22	-	2	12	-	-	9
2.	3-12 months	6	-	12	-	7	2	-	9
3.	1-2 years	2	-	7	-	2	2	-	5
	Above 2 years	2	-	2	-	2	-	-	2
4.	Breeding bulls	4	-	2	-	-	3	-	3
5.	Bullocks / Teasers / others	2	-	-	-	-	1	-	1
	Sub Total	17	22	23	2	23	8	-	29
	Grand Total	88	35	60	3	60	10	-	110

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities during 1st April 21to 31st March 22

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 21	1							1
May	2							2
June								1
July	2	1		1				3
August		2						2
September	2	1						3
October	4	1						5
November		3						3
December	2	2		1				5
January 22	4							4
February	4	2						6
March	1	1						2
Overall	**22**	**13**		**2**				**37**

Sex ratio Male : Female (63:37) SB% = 0.00 Abortion % = 5.4

9.3. Disposal of Animals during the Period 1st April 21 to 31st March 22

Female								
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves 0 to 3 months 3-12 months								
Heifers 1-2 years > 2 years								
Buffaloes Milch Dry		 1 1	 1					 2 1
Sub Total		2	1					3
Males								
Calves 0 to 3 months 3-12 months	 2					 2		 2 2
1 to 2 year	2							2
. >2 year								
Breeding bulls			3*					3
Bullock+Teaser+Others	1							1
Sub Total	5		3			2		10
Grand Total	5	2	4			2		13

* Breeding bull found +ve for IBR and were removed from the herd.

9.4. Mortality during the Period 1st April 2021 to 31st March, 2022

Female							Male					Overall Herd
	0-3 Month	3-12 Month	1-2 Yrs.	Above 2 Yrs.	Milk + Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
No. Died %	13 0				51 1 1.96	84 1 1.19	23 2 8.6				39 2 5.12	123 3 2.43

Calf mortality (0-3 months) 5.55% (2/36)

9.5. Causes of Mortality (quarter wise) during the period April 2021 to March 2022

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	1		1		2
Pheumonities					
Septicamia / Toxaemia					
Peritonitis	NIL				
JD/TB					
Milk Fever/ metabolic diseases					
TRP / TP					
Accidental death					
Miscellaneous	1				1
Total	2		1		3

9.6 Prophylactic Measures undertaken

Disease	**Vaccination Date / No. of animals**	**No. of animals** Tested / Positive		**Dates and No. of animals treated for Parasitism**	
FMD	June 2021 : 90 animals			Apr 16	Jan 39
HS	June 2021 : 90 animals			May 13	Feb 11
BQ	June 2021 : 90 animals			July 2	Mar 38
Brucellosis		14	-ve	Aug 6	
JD		10	-ve	Sep 32	
TB		10	-ve	Oct 4	
IBR		14	3 +ve	Nov 21	
Mastitis				Dec 25	

* IBR positive bulls were disposed off

9.7. Female Conception Rate During the Period January to December 2021

AI No.→	1st			2ND			3RD			4TH& above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	13	11	91.6	1	1	100							14	12	85.7
Adults	30	14	46.6	14	11	78.5							44	25	56.8
Overall	43	25	58.1	15	12	70.5							58	37	63.8

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8.Quarter-wise conception rate

Quarter	No. of A I	Preg. animals	CR %
January – March Previous year	18	11	61.1
April - June	9	5	55.5
July - September	11	6	54.5
October- December	20	15	75.0
Overall	58	37	63.8

9.9. Bull-wise Conception Rate During the period January to December, 2021

Sr. No.	Bull No.	Total Number of AI	Total Conceived	CR%
1.	B333	3	2	66.6
2.	B354	25	16	64
3.	B366	8	7	87.5
4.	B393	5	3	60.0
5.	B428	17	9	52.9
		58	37	63.8
No. of service per conception: 1.56				

9.10 Bull Wise Semen Stock as on 31.03.2022

Sr.No	Bull No	O.B.	Doses produced / received	Doses used /disseminated			Balance
				Supply	Sold	Exp.	
1.	B46	264					264
2.	B76	215					215
3.	B78	179					179
4	B79	337					337
5	B84	141					141
6	B87	368					368
7	B138	364					364
8	B122	292					292
9	B143	400					400
10	B147	30					30
11	B150	169					169
12	B167	275					275
13	B170	254					254
14	B182	339					339
15	B184	291					291
16	B228	1397					1397
17	B240	1072		200			872
18	B244	1105					1105
19	B331	9451		400			9051
20	B333	2777		1803			974
21	B354	3037		225			2812
22	B366	4576		868			3708
23	B393	1539	3220	605			4154
24	B428	1199		17			1182
	B452		1080				1080
	B481		850				850
Grand Total		**30071**	**5150**	**4118**			**31103**

9.11.1 Average Body weight (kg) since inception (Indicate number of animals in parenthesis)

Year	Birth	3 Months	6 Months	12 Months	18 Months	24 Months	At AFC (n)
Females							
2003-04	24.8 (7)	46.4(12)	67.5(9)	118.8(11)	163.8(8)		
2004-05	24.1(13)	46.1(12)	64.8(5)	106.7(7)	173.40(15)		
2005-06	27.3(13)	44.3(10)	63.2(8)	110.8(12)	183.3(11)	225.1	
2006-07	26.3(11)	44.4(5)	65.0(7)	107.2(8)	166.5(11)	210.4(12)	420 (6)
2007-08	24.7(13)	40.5(16)	62.0(13)	104.1(11)	167.2(5)	230.8(7)	346 (7)
2008-09	26.5(10)	40.9(10)	62.7(11)	108.7(17)	168.2(13)	232.1(14)	327 (6)
2009-10	26.8(18)	41.5(19)	64.8(16)	115.1(16)	169.3(19)	228.0(20)	363 (10)
2010-11	24.5(18)	40.8(13)	60.4(15)	104.8(16)	154.8(13)	206.2(9)	334 (6)
2011-12	26.0(2)	42.6(6)	57.9(11)	108.3(11)	156.9(10)	196.0(10)	336 (7)
2012-13	24.8(9)	43.5(6)	58.0(3)	112.4(2)	160.0	201.4(8)	335 (2)
2013-14	25.4(11)	43.7(7)	67.4(7)	106.8(5)	161.2(4)	192.5(2)	387 (6)
2014-15	24.5(12)	48.7(12)	66.8(11)	105.6(11)	155.8(11)	211.4(6)	356 (15)
2015-16	25.6(15)	51.8 (11)	79.2(9)	110.5(11)	143.7(8)	205.5(10)	373 (3)
2016-17	24.7 (7)	53.5 (5)	74.6 (6)	116.9 (10)	164.0 (11)	202 (10)	335 (3)
2017-18	23.6 (11)	52.0 (9)	80.0 (7)	114.5 (7)	170.0 (6)	223 (6)	352 (6)
2018-19	22.06 (12)	51.6 (12)	78.0 (15)	130.4 (10)	180.0 (10)	230 (7)	360 (12)
2019-20	24.8 (10)	56.0 (9)	95.3 (8)	137.1 (9)	183.7 (10)	252.4 (10)	354 (3)
2020-21	27.6 (9)	64.4 (13)	95.1(12)	143.1 (9)	203.2 (6)	265.5 (9)	395.7 (8)
2021-22	24.3 (13)	59.0 (10)	92.0 (17)	151.0 (17)	197.0 (16)	248.0 (9)	386.0 (15)
Males							**Adults**

2003-04	26.9(16)	49.2(14)	74.8(10)	133.2(10)			431(5)
2004-05	24.6(12)	47.0(11)	68.4(7)	115.7(11)			501(4)
2005-06	27.9(25)	46.9(20)	68.6(16)	123.5(10)	203.6(10)	258.0	445(9)
2006-07	27.3(18)	45.0(17)	70.4(17)	115.5(17)	179.7(16)	234.3(10)	460(9)
2007-08	27.7(20)	42.5(20)	67.9(21)	114.1(19)	178.2(14)	234.5(12)	413(15)
2008-09	27.3(10)	43.0(10)	67.8(11)	114.3(18)	180.0(15)	242.5(6)	420(15)
2009-10	27.3(20)	44.2(22)	68.3(19)	116.0(12)	175.0(10)	236.0(11)	423(9)
2010-11	26.2(9)	41.9(11)	65.0(12)	112.7(11)	160.4(5	224.5(4)	416(10)
2011-12	27.4(5)	42.7(6)	60.6(8)	112.0(3)	165.0(1)	-	425(5)
2012-13	25.9(13)	43.6(14)	60.5(10)	116.0(4)	175.0	235.0(3)	457(3)
2013-14	25.8(13)	45.2(9)	70.8(10)	108.3(10)	157.3(6)	195.0(3)	446(2)
2014-15	26.3(18)	50.5(14)	63.6(13)	105.1(6)	158.7(4)	261.0(2)	436(4)
2015-16	26.8(12)	46.1(9)	71.6(6)	122(8)	155.5(8)	230(8)	470(4)
2016-17	26.6(15)	56.6(9)	73.9(17)	114.7(6)	186.4(3)	221(3)	459(6)
2017-18	23.8(10)	54.0 (9)	81.0 (9)	117.0 (6)	182.0 (2)	258.0 (2)	492 (4)
2018-19	24.3 (10)	53.1 (10)	82.3 (11)	134.0 (4)	198.0 (5)	250.0 (2)	184 (5)
2019-20	25.7 (7)	59.6 (5)	94.8 (7)	139.6 (5)	198.2 (5)	-	476 (6)
2020-21	26.4 (10)	63.7 (10)	99.2 (8)	143.5 (4)	218.5 (4)	249.8 (4)	474 (4)
2021-22	27.3 (22)	64.0 (12)	98.0 (18)	144.0 (9)	217.0 (9)	251.0 (4)	480 (6)

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	9	1796.8	373.3	1569.2	7.66
2nd	8	1905.0	335.3	1642.1	8.36
3rd	2	2344.3	359.0	1991.0	9.65
4th	1	2036.7	367.0	1600.0	7.80
5th & above	3	1775.7	357.0	1563.5	8.50
Overall	**23**	**1889.8**	**356.4**	**1631.8**	**8.19**

9.12.1 Average production performance of Buffaloes Since Inception of Network

Year	Lactation Length (days)	TLMY (kg)	SLMY (kg)	Peak yield(kg)
2003-04	296 (24)	1067.95	1029.41	6.6
2004-05	245 (29)	997.96	958.96	6.7
2005-06	236.53 (17)	891.81	891.81	6.30
2006-07	304.49 (35)	1294.65	1159.22	6.83
2007-08	279.29 (24)	1201.33	1188.92	6.61
2008-09	344 (31)	1561.11	1433.48	7.41
2009-10	294.7 (26)	1331.47	1286.50	7.5
2010-11	311.0 (34)	1381.44	1310.00	7.22
2011-12	293.76 (13)	1276.65	1214.78	6.19
2012-13	334 (8)	1587.76	1494.9	8.19
2013-14	294.5 (21)	1416.3	1385.9	7.50
2014-15	367 (21)	1638.8	1478.3	7.33
2015-16	330 (25)	1406.64	1321.8	7.36
2016-17	299 (26)	1430.3	1368.2	8.35
2017-18	316.5 (19)	1478.4	1402.5	7.69
2018-19	332 (17)	1373.9	1224.4	6.70
2019-20	357 (18)	1466.88	1285.57	6.73
2020-21	354 (10)	1733.5	1558.1	8.10
2021-22	356.4 (23)	1889.7	1631.8	8.19

*Within parenthesis are number of observations

9.12.2 Herd Life Production (up to 4th Lactation) during 2021-22

Animal No.	DOB	Date of completion of 4th or more lact. or disposal	HLF (days) up to 4th or more lactation or disposal (d)	LTMY (kg)	Productive Days	Unproductive Days	MY/day HLF
B248	15.07.08	20.01.21	4572	6650.2	1395	3177	1.43
B258	20.09.08	24.02.21	4540	9049.6	1867	2673	1.99
B287	14.10.09	26.09.20	4000	8226.3	1901	2099	2.05
B293	10.12.09	03.09.21	4285	10327.3	2182	2103	2.41
B295	17.12.09	28.06.21	4211	9790.1	2039	2172	2.32
B308	22.08.10	22.09.20	3684	7009.9	1566	2118	1.90
B355	06.02.13	03.02.22	3284	6497.9	1402	1882	1.98

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. Or date of disposal)
Productive Days (date of first calving to total days in milk), Unproductive days (total days when buffalo not give milk from the date of first calving)

9.13 Average Milk Composition from April 2021 to March 2022

Month	N	Fat	SNF	Protein	Lactose
April 2021	26	7.20	9.39	3.37	5.09
May	28	8.14	9.68	3.52	5.13
June	28	8.54	9.56	3.51	5.28
July	32	9.37	9.91	3.57	5.40
August	42	8.73	9.64	3.50	5.26
September	39	8.37	9.75	3.52	5.27
October	40	8.29	9.72	3.54	5.30
November	50	8.35	9.94	3.60	5.40
December	54	8.21	9.86	3.58	5.30
Overall	339	8.38	9.75	3.53	5.29

9.14: Reproductive Performance

Lactation / Parity	AFC (Months) (N)	N →	SP (Days)	Days Open	DP (Days)	CI (Days)
1	48.2±2.4 (15)					
2		7	281.8±62.0	284.7±61.5	197.1±57.2	584.7±62.14
3		5	143.3±40.7	143.3±40.7	124.8±9.67	433.0±35.0
4		2	212.5±69.7	212.5±69.7	159.0±43.1	518.0±71.2
5th and above		3	90.6±6.18	247.6±54.1	194.3±55.3	533.3±57.9
Over all		17	199.2±33.3	228.1±31.9	170.8±25.6	523.1±32.28

*Service Period (days)= Date of 1 st AI – Date of last calving
*Days Open (days) = Date of A I when animal conceived – date of last calving

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (Months)	Service Period (days)	Days Open (days)	Dry Period (days)	Calving Interval (days)
2003-04	-	137.90 (16)		220.25 (16)	444.5 (16)
2004-05	-	230.33 (24)		269.29 (24)	535.8 (24)
2005-06	-	156.25 (28)		218.46 (28)	463.57 (28)
2006-07	44.60 (5)	166.33 (21)		203.29 (21)	467.33 (21)
2007-08	43.20 (7)	226.73 (26)		216.13 (26)	530.80 (26)
2008-09	51.20 (6)	148.60 (15)		206.8 (15)	499.6 (15)
2009-10	53.22 (10)	167.84 (24)		202.75 (24)	525.79 (24)
2010-11	49.11 (7)	160.00 (20)		222.75 (20)	516.95 (20)
2011-12	49.00 (2)	179.28 (13)		187.92 (13)	497.20 (13)
2012-13	51.32 (12)	153.75 (8)		202.62 (8)	513.25 (8)

2013-14	50.13 (6)	174.90 (11)		214.2 (11)	520.10 (11)
2014-15	53.97 (15)	182.3 (15)		216.4 (15)	534.0 (15)
2015-16	47.25 (5)		212.3 (24)	192.08 (24)	523(24)
2016-17	50.6 (4)		176.2 (18)	163.6 (18)	478.3 (18)
2017-18	46.26±0.7 (7)	172.6±31.5 (15)	190.5±31.8 (15)	177.3±24.3 (14)	493.3±31.7 (15)
2018-19	47.28±1.6 (13)	180.6±38.9 (9)	181.7±39.3 (9)	173.1±30.4 (9)	486.8±42.7 (9)
2019-20	48.23±2.9 (3)	172.3±38.4 (11)	189.1±39.0 (11)	171.8±24.3 (11)	490.5±40.4 (11)
2020-21	52.23±2.26 (8)	181.3±407 (12)	203.0±46.0 (12)	174.2±28.9 (12)	499.7±52.5 (12)
2021-22	48.2±2.4 (15)	199.2±33.3 (17)	228.1±31.9 (17)	170.8±25.6 (17)	523.1±32.2 (17

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 21	3419.4	2778.2	641.20	
May	3260.5	2608.9	651.6	
June	2964.8	2453.2	511.6	
July	2471.5	2064.5	407.0	
August	2377.9	2041.3	336.6	
September	2551.9	1973.4	578.5	
October	2719.1	2083.3	645.8	
November	3211.6	2420.5	791.1	
December	3576.1	2770.4	805.7	
January 22	3848.3	3002.2	846.1	
February	4271.2	3253.2	1018.0	
March	5368.0	4344.6	1023.4	
Total	40050.3	31793.7	8256.6	

Note: Mention sale price of milk (range during the year): Rs. 40 per kg (upto 09.04.2021) and Rs. 42 per kg w.e.f.10.04.21

9.16 Feed and fodder (Quintals) availabilityApril 2021 to March 2022

Quarter		Qty. Produced at Farm (Qt.)	Qty. Purchased (Qt.	Actually fed (Qt)	Balance (Qt.)
I (April – June)	Green	200		200	
	Dry	484		484	
	Silage	105		105	
	Concentrate		13.1*	151.2	
II (July – September)	Green	350		350	
	Dry	135		135	
	Silage	-		-	
	Concentrate	-	6.0	101.5	
III (October – December)	Green	360		360	
	Dry	120		120	
	Silage	-		-	
	Concentrate	-	360	50.0	
IV (January-March)	Green	1000		1000	
	Dry	25		25	
	Silage	-		-	
	Concentrate	-	250	175	
Total	Green	1910		1910	
	Dry	764		764	
	Silage	105		105	
	Concentrate	-	629.1	477.7	151.4

*Balance from previous year

9.17: Milk performance during April 2021 to March 2022

Month	Buffaloes in milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April, 21	24	13	37	64.8	5.14	3.08
May	24	13	37	64.8	4.68	2.84
June	23	15	38	60.5	4.43	2.60
July	24	13	37	64.8	3.79	2.15
August	20	17	37	54.0	4.12	2.07
September	23	14	37	62.1	4.48	2.29
October	26	12	38	68.4	4.20	2.31
November	26	13	39	66.6	4.58	2.74
December	27	16	43	62.7	4.58	2.68
January, 22	29	16	42	69.0	4.88	2.95
February	33	9	42	76.7	5.38	3.63
March	32	10	42	76.19	5.62	4.12
Overall	**25.9**	**13.4**	**39.1**	**65.9**	**4.66**	**2.79**

9.17.1 Milking performance since inception

Year	No. of Animal in Milk	No. Of Animal dry	Total Animal	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2002-03	19	23	42	46.03	3.30	1.35
2003-04	18	22	40	44.74	3.44	1.35
2004-05	23	16	38	59.44	3.75	1.97
2005-06	22	20	42	51.43	3.74	1.80
2006-07	27	20	47	57.67	3.56	1.86
2007-08	27	19	46	58.69	4.67	2.57
2008-09	29	18	47	62.9	4.35	2.49
2009-10	27	23	50	54.5	4.64	2.37
2010-11	27	21	48	56.90	3.95	2.02
2011-12	12.5	20.92	33.41	37.41	4.65	1.58
2012-13	14	19.75	34	41.17	4.57	1.75
2013-14	21	19	40	52.50	4.72	2.24
2014-15	28	16	44	63.6	4.22	2.50
2015-16	27.58	15	42.58	64.77	4.49	2.64
2016-17	22.5	10.16	32.7	70.85	4.62	2.97
2017-18	17.83	10.33	28.16	64.02	4.16	2.39
2018-19	20.8	9.08	29.9	70.07	3.67	2.34
2019-20	15.8	14.5	30.3	52.42	4.44	2.10
2020-21	20.25	14.08	34.33	58.53	5.06	2.84
2021-22	25.9	13.4	39.1	65.9	4.66	2.79

9.18: Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
*		22	16	16
B1		7	7	7
B44		13	9	9
B45		4	4	4
B46		10	8	8
B76		4	3	3
B78	1	5	5	5
B79	1	7	4	4
B84	1	12	8	6
B87	1	7	4	4

B89	1	5	1	1
B138	1	16	6	6
B143	2	2	1	1
B147	2	2		
B170	2	7	6	5
B182	2	3	1	1
B184	2	8	4	4
B228	3	5	5	3
B240	3	19	14	14
B244	3	15	11	9
B331	3	21	10	1
B333	3	10	4	
B354	3	20	1	
B366	3	5		
B428	3	3		

9.19 Bull wise daughters completing 1ST lactation

Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
244	448	01-09-2016	25-02-2020	42.4	431	2337.1	1720.0
240	423	19-09-2015	02-09-2020	60.3	324	1420.3	1250.0
240	457	18-01-2017	06-12-2020	47.3	305	1633.7	1633.7
240	413	07-08-2015	07-09-2020	61.9	401	1745.0	1663.0
240	435	20-01-2016	10-10-2020	57.5	385	1865.0	1756.0
244	456	23-12-2016	03-09-2020	45.0	430	2173.1	1780.0
244	461	09-04-2017	14-10-2020	42.8	435	1965.8	1607.2
244	437	08-03-2016	04-12-2020	57.7	416	2133.8	1816.0
331	462	03-08-2017	19-07-2021	48.2	233	0897.7	0897.7

9.20 Breeding bulls Selected for current set

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	B-393	18/09/2014	88	244	2000
2	B-452	24/09/2016	88	240	2000
3	B-481	03/02/2018	195	331	1927
4	B-524	20/02/2020	258	354	1715
5	B-529	31/08/2020	293	354	1875

9.22 Target achieved during the years

Trait	**Target**	**Achieved**				
		2017-18	**2018-19**	**2019-20**	**2020-21**	**2021-22**
Av. Age at 1st calving (months)	40	46.26±0.7 (7)	47.28±1.6 (13)	48.23±2.9 (3)	52.23±2.26 (8)	48.2±2.4 (15)
Av. Service period (days)	90	172.6±31.5 (15)	180.6±38.9 (9)	172.3±38.4 (11)	181.3±407 (12)	199.2±33.3 (17)
Calf mortality (0-3 months)	≤ 3 %	4.1	4.16	0.0	4.00	5.55
Wet average (kg)	≥5 kg	4.16	3.67	4.44	5.06	4.66
Herd average (kg)	≥3 kg	**2.39**	2.34	2.10	2.84	2.79

Conservation in the breeding Tract

a) Germ Plasm Dissemination (during 2021-22)

- 8 males and 2 femal were sold to farmers through auction

b) Artificial Insemination in field (2020-21)

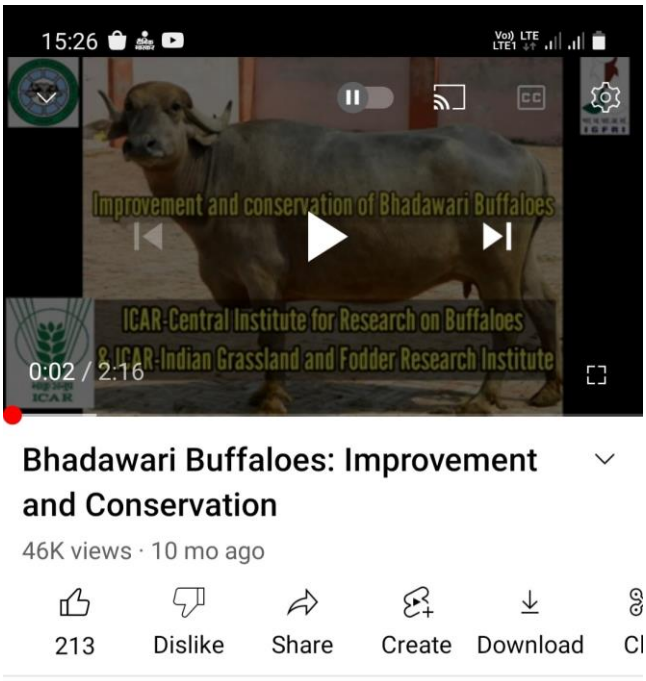
AI performed	1487
Buffalo sold before Pd	40
Died	5
Buffalo pregnant	612
Conception rate (%)	41.2
Abortion	8
Pregnant buffalo sold	90
Calvings recorded	350 (178 Males, 172 Females)

Artificial Insemination in field (2021-22)

Month	**No. of AI**
APR 21	7
MAY	0
JUN	0
JUL	128
AUG	339
SEP	365
OCT	212
NOV	232
DEC	802
JAN 22	680
FEB	54
MAR	2
TOTAL	**2821**

10. Salient Research Achievements:

- Average lactation milk yield, 305 days or less milk yield and wet average and herd average were recorded as 1889.7 kg, 1631.8 kg, 4.66 kg and 2.79 kg, respectively.
- Average age at first calving, average service period and conception rate were 48.2 months, 199 days and 63.8 percent, respectively.
- Only two calf (0-3 months) died during the year.
- In the field 350 calvings were recorded from the AI done during the year 2020-21. Conception rate in the field was recorded as 41.2 percent.
- Artificial insemination in the Bhadawari breeding tract was continued during the year 2021-22. A total of 2821 artificial inseminations were performed.
- Kishan gosthy /meeting with the farmers were held in the breeding tract to motivate farmers for keeping Bhadawari buffaloes.
- A video on Bhadawari buffaloes was prepared and uploaded in ICAR-IGFRI Jhansi You Tube Channel. There are more than 45000 views.



11. Publications

Research papers in journals

- Sultan singh, B P Kushwaha, U Y Anele, A K Misra, S K Nag and A Singh, 2020 Gas and methane production vis-a vis loss of energy as methane from in vitro fermentation of dry and green forages in sheep and goat inocula. Indian Journal of Animal Science, 90(4):636-642
- Anele U Y, S Singh, B P Kushwaha, P K Gupta and S Bhattacharya 2020. Chemical composition, in vitro dry matter digestibility, gas production and methane emission of maintenance, growth and production diets/ration of buffaloes. Journal of Animal Science, 98(4):408
- B. P. Kushwaha, Deepak Upadhyay, Sulthan Singh, S. B. Maity, K. K. Singh and A. K. Misra (2020). Fatty and acid composition of Murrah Buffalo Milk Fat. Under publication in Buffalo bulletin.
- Maity S. B, Kushwaha B P, Sultan Singh, Anil Kumar, S K Nag, S K Das, A K Rai and A K Dixit (2021). Milk Fatty acid profile of Indian dairy cows reared under organic and indorganic feeding management. Accepted for publication in Indian Journal of Animal Science.

Presentation in Conference/symposis/seminars/other for a etc.

- B P Kushwaha, Sultan Singh, Deepak Upadhyay and A K Misra (2021). Conservation of Bhadawari buffalo in India. 10th Asian Buffalo Congress 2021 (ABC 2021), 3-5 June 2021, Kathmandu, Nepal. Paper accepated for oral presentation.

Book Chapter:

- Bhainso ki vividh naslen by B P Kushwaha in: Kishan ki Aajivika evam aai ka Uttam Sadhan: Unnat Bhains Palan (2020) Editor: Hema tripathi, Vishal Mudgal, Sajjan Singh and V B Dixit. Book is under publication.

12. Socioeconomic impact/ success stories: Activities of the project is creating awareness among t he farmers about the Bhadawari buffaloes and farmers are coming forward to purchase Bhadawari animals for rearing purpose during auction. It is a means of livelihood to the resource poor and remotely located farmers.

13. Constraints if any: Nil

14. Focus of work in the coming year: Breed activities shall be continued through semen freezing and artificial insemination in the Bhadawari breeding tract. Efforts will be made to disseminate Bhadawari germplasm through sale of frozen semen/breeding bulls to various agencies for their use in the field. Demonstration, radiotalk and kishan gosthies shall be organized to motivate farmers for rearing of Bhadawari buffaloes.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC		Closing balance
Total	ICAR Share		ICAR Share	State Share	
43.00*	41.00+2.00 *	43.00*	42.90826	0.00	0.09174

* Includes 2.00 lakhs for SCSP

Herd Performance

The Herd strength was 110 head, which comprises of 61 breeding buffaloes (>2.0 years), 35 calving took place during the period out of which 22 were male and 13 were female. 0-3-month calf mortality was 5.55 % and conception rate was 63.80 percent. 5150 doses of frozen semen were produced and 4118 doses were used/ supplied for AI purpose in the field and 31103 frozen semen doses were in the stock.

Average lactation yield increased from 1733.5 kg (10) to 1889.7 (23), lactation length 354 days (10) to 356.4 days (23) and 305 or less day milk yield was from 1558.5 kg (10) to 1631.8 (23) during the report period. Age at first calving, average service period, average dry period and average calving interval was 48.2 month (15), 199 days (17), 170.8 days (17) and 523.1 days (17), respectively. 65.90 % animals were in the milk with wet average 4.66 kg and herd average 2.79 kg decreased from 5.06 kg and 2.84 kg in last year. A total 2821 AI's were performed in field, 350 calving recorded from the AI's of 2020-21 and conception rate recorded in the field was 41.20 percent.

Accomplishment and Targets Achieved:

Trait	**Target**	**Achieved**				
		2017-18	**2018-19**	**2019-20**	**2020-21**	**2021-22**
Av. Age at 1st calving (months)	40	46.26±0.7 (7)	47.28±1.6 (13)	48.23±2.9 (3)	52.23±2.26 (8)	48.2±2.4 (15)
Av. Service period (days)	90	173±31.5 (15)	181±38.9 (9)	172±38.4 (11)	181±407 (12)	199±33.3 (17)
Calf mortality (0-3 months)	≤ 3 %	4.1	4.16	0.0	4.00	5.55
Wet average (kg)	≥5 kg	4.16	3.67	4.44	5.06	4.66
Herd average (kg)	≥3 kg	**2.39**	2.34	2.10	2.84	2.79

Recommendations:

- Efforts to be taken to increase the inseminations in field and conception rate of field buffaloes.
- Efforts should be made to improve the milk production traits and reduce the service period.

NETWORK PROJECT ON BUFFALO IMPROVEMENT (NILI RAVI, GADVASU)

1. **Name of centre** : GADVASU, Ludhiana
2. **Project Code** : AS-12/7/2017-AI-I
3. **Project Title** : Network Project on Buffalo Improvement
   Sub-project **:** Performance recording and improvement of Nili Ravi buffalo
4. **Date of Start** : 17 November, 2017
5. **Name of PI** : Dr. Simarjeet Kaur

6. **Objectives** :

I. To establish elite herd of 50 to 100 Nili Ravi (at each center) for the production of genetically superior young bulls.
II. To evaluate sires through institutional / associated herd/ field progeny testing
III. To produce, test, propagate and conserve high genetic merit male germplasm

7. **Technical Programme:**

- Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 300 and 200 breed able females.
- Selection and testing of minimum 8-10 bulls for other breeds in every 24 months cycle.
- Production of minimum 3000 to 5000 frozen semen doses from each test bull.
- Maintain a minimum number of 2000 of frozen semen doses until the particular SET gets evaluated.
- Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
- Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
- Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd over complete lactation (s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, and Peak yield.
- Monthly testing of milk constituents (Fat%, SNF% and Protein %) and Somatic Cell Count, wherever feasible, at institutional herds.
- Recording of reproductive traits viz., AFC, Service period, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
- Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

Name of PI : Dr. Simarjeet Kaur

8. **Financial Statement**: Head wise budget allocation

Account Head	Budget Allotted	ICAR Share 75%	Expenses made	Balance
Recurring Contingencies	30,00,000.00	22,50,000.00	30,00,000.00	0
TA/POL	0	0	0	0
Non-Recurring Contingencies				
Livestock	0	0	0	0
Furniture	2,00,000.00	1,50,000.00	2,00,000.00	0
Total	**32,00,000.00**	**24,00,000.00**	**32,00,000.00**	**0**

ICAR Share 75% = Rs 22,50,000/- State Share 25% = Rs.7.50,000/-.

9.1 Herd Strength during the Period 1st April 2021 to 31st March, 2022

Sr. No.	Category	Addition			Disposal				CB
		OB	**B / P**	**T**	**D**	**T**	**S**	**E**	**CB**
	FEMALE								
1.	Below 3 months	2	24	-	6	12	-	-	8
2.	3-12 months	22	0/2	12	4	22	1	-	9
3.	1-2 years Above 2 years	17 33	0/2 0/9	22 13		13 16	3 8	-	25 31
4.	Buffaloes in Milk	38	0/4	1	2	-	10	-	31
5.	Buffaloes Dry P /NP	7	0/3	15		-	9	-	16
	Sub Total	**119**	44	-	12	-	31	-	**120**
	MALE								
1.	Below 0- 3 months	4	27	-	4	21	1		5
2.	3-12 months	9	0	21	1	15	8		6
3.	1-2 years Above 2 years	2 1	0/2	15 1		- 2	12 -		8 0
4.	Breeding bulls	6	0	-		-	-	-	6
5.	Bullocks / Teasers / others	-	0	-		-	-	-	
	Sub Total	22	29	-	5	-	21	-	25
	Grand Total	**141**	**73**	-	**17**	-	**52**	-	**145**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 21	-	-	-	-	-	-	-	-
May	1	-	-	-	-	-	-	1
June	1	3	-	1	1	-	-	6
July	1	3	-	1	-	-	-	5
August	2	3	-	-	-	-	-	5
September	6	1	-	1	-	-	-	8
October	2	5	-	-	-	1	-	8
November	2	1	-	3	-	-	-	6
December	2	2	-	-	-	-	-	4
January 22	2	2	-	-	-	-	-	4
February	3	6	-	2	-	-	-	11
March	2	1	2	1	-	-	-	6
Overall	**24**	**27**	**2**	**9**	**1**	**1**	**-**	**64**

Sex ratio Male: Female 0.8:1 SB% = 0.03% Abortion = 14.00%

9.3. Disposal of Animals during the Period 1st April 21 to 31st March 22

Female	**Primary cause of disposal**							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves 0 to 3 months	-	-	-	-		8	-	8
3-12 months	-	-	-	-	1	2	-	3
Heifers 1-2 years	-	-	-	-	2		-	2
> 2 years	-	-	2	2	4		-	8
Buffaloes Milch	-	6	-	-	-	2	-	8
Dry	-	1	3	7	3	-	-	14
Sub Total	-	7	5	9	10	12	-	43

Males								
Calves 0 to 3 months	2	-	-	-	-	4	-	6
3-12 months	15	-	-	-	-	1	-	16
1 to 2 year	14	-	-	-	-	-	-	14
.>2 year	-	-	-	-	-	-	-	-
Breeding bulls	-	-	-	-	-	-	-	-
Bullock+Teaser+Others	-	-	-	-	-	-	-	-
Sub Total	31	-	-	-	-	5	-	**36**
Grand Total	31	7	5	9	10	17	-	**79**

9.4. Mortality during the Period 1st April 2021 to 31st March, 2022

	Female						Male					Overall Herd
	0-3 Month	3-12 Month	1-2 Yrs.	Above 2 Yrs.	Milk + Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
No. Died %	8	2	-	-	2	12	4	1	-	-	5	17

Calf mortality (0 to 3 months) 17.54 % (10/57)

9.5. Causes of Mortality (quarter wise) during the period April 21 to March 2022

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	2	-	1	1	4
Haem. Enteritis	-	1	-	-	1
Pheumo Enteritis	-	-	4	-	4
Broncho-Pheumonia	1	1	2	-	4
Septicamia / Toxaemia	-	-	-	1	1
Peritonitis	-	-	-	-	-
JD/TB	-	-	-	-	-
Milk Fever / metabolic diseases	-	-	-	-	-
Parasitism	-	-	-	-	-
Accidental death	-	-	-	-	-
Peri-parturient disorders	-	-	-	-	-
Miscellaneous	-	-	-	3	3
Total	**3**	**2**	**7**	**5**	**17**

1.6 Prophylactic Measures undertaken

Disease	**Vaccination No. of animals**	**No. of animals** Tested	Positive	**Dates and No. of animals treated for Parasitism**
FMD	445			No clinical case of parasitic infestation was observed during the year. All the animals were dewormed as per normal schedule
HS	445			
BQ	139			
Brucelloses	12			
JD	-			
TB	-			
IBR	-			

9.7. Female Conception Rate during the Period January 2021 to December 2022

AI →	1st			2ND			3RD			4TH & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	24	9	37.50	14	4	28.57	11	8	72.72	16	8	50.00	65	29	44.61%
Adults	29	13	44.82	19	8	42.10	10	4	40.00	17	5	29.41	75	30	39.47%
Overall	53	22	41.50	33	12	36.36	21	12	57.14	33	13	39.39	140	59	**42.14**

AIs = No. of animals inseminated; C = No. of animals conceived; CR % = Conception rate %

9.8 Quarter-wise conception rate:

Quarter	No. of A I	Preg. animals	CR %
January – March	39	13	33.33%
April - June	36	19	52.77%
July - September	24	8	33.33%
October- December	41	19	46.34%
Overall	**140**	**59**	**42.14%**

9.9. Bull-wise Conception Rate During the period January to December, 2021

Sr. No.	Bull No.	Total Number of AI	Total Conceived	CR%
1.	27	2	1	50.0
2.	113	7	0	0.0
3.	352	6	2	33.3
4.	359	4	2	50.0
5.	480	11	4	36.4
6.	487	12	5	41.7
7.	507	11	5	45.5
8.	516	16	4	25.0
9	543	4	0	0.0
10	551	8	3	37.5
11	556	6	4	66.7
12	565	1	0	0
13	579	6	3	50.0
14	674	6	3	50.0
15	702	4	2	50.0
16	705	10	9	90.0
17	905	5	1	20.0
18	916	18	8	44.4
19	2591	2	2	100.0
20	3002	1	1	100.0
Total		**140**	**59**	**42.14%**

9.10 Bull Wise Semen Stock: -

Sr. No	Bull No	O.B.	Doses produced/received	Doses used /disseminated				
				Dairy Farm	Sold	Exp.	Total Supply	Balance
1.	NR2563	6596	-	3722		-	3722	2874
2.	NR2591	3697	1405	-	5002	-	5002	100
3	NR3002	-	2270	-	-	-	-	2270
Total		10297	3675	3722	5002	-	8784	5244

9.11.1 Average Body weight (kg) (Indicate number of animals in parenthesis)

Year	Birth	3 Months	6 Months	12 Months	18 Months	24 Months	WFC
Female							
2017-18	36.30 (25)	57.00 (17)	92.00 (15)	168.00 (16)	310.00 (24)	385.00 (21)	595.00 (18)
2018-19	34.12 (23)	67.38 (11)	110.63 (11)	193.22 (18)	313.25 (9)	406.00 (14)	605.62 (16)
2019-20	32.34 (25)	63.37 (20)	104.99 (17)	181.17 (16)	309.96 (16)	397.81 (22	561.64 (16)
2020-21	31.80 (25)	61.80 (18)	110.30 (16)	169.00 (14)	298.40 (19)	370.00 (27)	549.54 (12)
2021-22	31.20 (24)	63.79 (15)	110.30 (14)	167.00 (19)	304.00 (17)	344.00 (23)	547.00 (21)

Male							Adults
2017-18	34.7 (26)	70 (19)	110(15)	190 (8)	330 (4)	480 (2)	
2018-19	34.87 (29)	70.06 (12	110.00 (7)	231.00 (5)	354.20 (5)	490.00 (4)	
2019-20	34.13 (24)	69.45 (12)	113.81 (9)	235.24 (5)	350.0	540.09 (2)	
2020-21	34.07 (26)	72.00 (11)	120.40 (6)	210.60 (8)	335.80 (5)	590.40 (5)	
2021-22	33.20 (27)	70. 80 (5)	114.00 (6)	238.00 (4)	380.00 (3)	690.00 (4)	

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	SLMY (kg)	Lact. Length (days)	Peak yield (kg)
1st	7	2476.34±148.0	313.8±18.04	2388.02±87.57	11.26±0.65
2nd	18	2540.17±154.65	280.17±11.58	2527.92±153.93	14.03±0.96
3rd	5	2918.67±339.28	375.67±45.71	2620±197.44	15.93±1.77
4th	1	2950	339	2874	12.8
5th & above	1	2214	270	2214	13.2
Overall	**32**	**2552.0±107.04**	**299.18±11.86**	**2485.43±93.77**	**13.94±0.54**

9.12.1 Average production performance of Buffaloes since Inception of Network

Year	N	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak yield (kg)
2017-18	36	278	2248.77	2187.60	12.36
2018-19	39	300	2543	2458	13.54
2019-20	44	302	2549	2478	13.71
2020-21	29	281	2511	2473	13.4
2021-22	32	299.18	2552.0	2485.43	13.94

9.12.2 Average production performance of Buffaloes (elite) since Inception of Network

Year	No. of Animals	Av. 305-day Yield (Kg)	Av. Lactation Length (days)	Average Complete Lactation Yield (kg)	Average Peak Yield (kg)
2017-18	3	2810	355	2941	16.03
2018-19	6	3206	342	3452	17.57
2019-20	11	2907	348	3090	14.91
2020-21	6	2900	291	2922	15.6
2021-22	6	3092	329	3185	16.75

9.13 Average Milk Composition from April 2021 to March 2022

Month	N	Fat	SNF	Protein	Lactose
April 21	30	7.23	9.69	3.41	5.26
May	36	7.74	9.79	3.56	5.37
June	29	8.04	9.6	3.59	5.61
July	30	7.84	9.9	3.61	5.54
August	24	7.66	9.58	3.29	5.46
September	27	7.24	9.87	3.53	5.69
October	27	7.98	9.69	3.7	5.6
November	26	7.53	9.76	3.23	5.57
December	23	8.0	9.56	3.48	5.76
January 22	23	7.46	9.79	3.39	5.41
February	31	7.89	9.82	3.47	5.7
March	30	7.79	9.7	3.66	5.3
Overall	**336**	**7.70**	**9.73**	**3.49**	**5.52**

9.14: Reproductive Performance during the year 4/2021 to 3/2022

Lactation / Parity	N	AFC (Months)	SP (Days)	DP (Days)	CI (Days)
1	21	41.14±0.86	-	-	-
2	6	-	149±35.77	167.5±26.53	450.5±35.67
3	11	-	94.72±11.01	120.81±8.27	399.90±12.05
4	4	-	141.5±59.54	147.75±34.32	440±60.42
5th and above	3	-	151.66±35.97	147.75±5.92	456±35.67
Overall	**45**	**41.14±0.86**	**123.20±14.66**	**138.79±9.69**	**426.25±14.75**

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
2017-18	42.43 (18)	180.15 (34)	215.09 (34)	486.82 (34)
2018-19	40.27±1.80 (15)	168.02 ± 30.10 (40)	238.37 ± 33.20 (40)	475.57 ± 30.31 (40)
2019-20	40.9±1.21 (18)	150.4±11.8 (53)	217±20.29 (53)	452.31±12.79 (53)
2020-21	40.3±2.2 (12)	109.6±10.9 (45)	183.6±5.9 (45)	417.9±3.8 (45)
2021-22	41.14±0.86 (21)	123.20±14.66 (45)	138.79±9.69 (45)	426.25±14.75 (45)

9.15. Month-wise milk production and disposal during the period 4/2021 to 3/2022

Month	**Production**	**Disposal**			
	Total milk produced (kg)	Liquid milk (kg)	Calf feeding (kg)	Experimental purposes (kg)	Milk lost in handling (kg)
April 2021	7988.6	7217	744	0	27.6
May	7024.3	6343	653.5	0	27.8
June	5883.2	5276	582.5	0	24.7
July	6075.3	5428	619.7	0	27.6
August	5835.9	4939	869.2	0	27.7
September	6741.7	5549	1165.9	0	26.8
October	6964.8	5379	1559.5	0	26.3
November	7069.1	5883	1157.2	0	28.9
December	6265.2	5471	766.7	0	27.5
January 2022	6095	5305	758	0	32
February	6579.5	5607	949.1	0	23.4
March	8173.2	6915	1226.5	0	31.7
Total	80695.8	69312	11051.8	0	332

9.15.1 Milk production and disposal during the period 4/2021 to 3/2022

Years	**Production**	**Disposal**			
	Total milk produced (kg)	Liquid milk (kg)	Calf feeding (kg)	Experimental purposes (kg)	Milk lost in handling (kg)
2017-18	88913.10	76025.0	12576.6	0.0	311.5
2018-19	97106.80	84574.0	12213.4	0	319.4
2019-20	85304.6	72319.0	12659.0	0	326.7
2020-21	100586.4	84412.0	15848.9	0	325.5
2021-22	80695.80	69312.0	11051.8	0	332.0

9.16 Feed and Fodder (Quintals) availability April 2021 – March 2022)

Quarter	**Feed/fodder**	**Quantity produced at farm**	**Quantity purchased**	**Actually fed to Nilli-Ravi buffaloes**
I (April – June)	Green	2335.12	-	-
	Dry	372.41	-	-
	Silage	265.58	-	-
	Concentrate		960.000	960.000
II (July – September)	Green	2885.68	-	-
	Dry	222.58	-	-
	Silage	378.70	-	-
	Concentrate		984.250	984.250
III (October – December)	Green	1939.10	-	-
	Dry	351.48	-	-
	Silage	405.07	-	-
	Concentrate		904.250	904.250
IV (January-March)	Green	2544.63	-	-
	Dry	243.09	-	-
	Silage	378.77	-	-
	Concentrate		885.250	885.250
Total	Green	9704.53	-	-
	Dry	1189.56	-	-
	Silage	1428.12	-	-
	Concentrate		3733.750	3733.750

9.17: Milk performance during April 21 to March 2022

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 2021	30	15	45	66.6	7.8`	5.9
May	36	8	44	83.7	7.6	5.1
June	29	14	43	67.44	7.5	4.5
July	30	13	43	69.76	7.6	4.56
August	24	15	39	61.53	7.65	4.08
September	27	15	42	64.28	8.32	5.35
October	27	14	41	65.85	8.32	5.48
November	26	21	47	52.00	9.06	4.71
December	23	22	45	51.11	8.78	4.79
January 2022	23	24	47	48.93	8.54	4.18
February	31	21	52	58.49	7.58	4.51
March	30	17	47	63.82	9.76	6.27
Overall	**28**	**17**	**45**	**62.79**	**8.21**	**4.95**

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of Animals dry	Total Animals	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2017-18	35	27.50	62.08	55.50	7.85	4.2
2018-19	33	32	65	50.69	7.97	4.12
2019-20	34	31	65	52.15	7.99	4.06
2020-21	37	20	57	66.33	7.49	4.98
2021-22	28	17	45	62.79	8.21	4.95

9.18: Bull wise daughters born (only numbers)

Bull No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
113	1	-	-
352	3	-	-
359	2	-	-
480	3	-	-
487	3	-	-
516	4	-	-
905	5	-	-
916	2	-	-
2591	1	-	-
OVERALL	**24**	-	-

9.19 Bull wise daughters completing 1ST lactation : Nil

9.20 Breeding bulls Selected for current set

Sr. No	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	543	24.6.15	900	25	3777
2	551	22.7.15	940	63	3317
3	556	10.8.15	366	R1	3277
4	579	26.10.15	827	245	3199
5	674	19.1.17	68	252	3161
6	705	10.7.17	115	473	3146
7	710	25.7.17	398	252	3395

9.20.1 PT Bulls for nominated mating

Bull No	Set No	Centre	Dams' best Yield	Sire Index	% Superiority
702	3rd	CIRB	3421	-	-
905	4th	CIRB	3639	-	-
916	4th	CIRB	2961	-	-

9.21 Target achieved during the year :

Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
Av. Age at first calving (months)	40	42.43 (18)	40.3 (15)	40.9 (18)	40.3 (12)	41.14 (21)
Av. Service period (days)	130	180 (34)	168 (40)	150.4 (35)	110 (45)	123 (34)
Calf mortality (0-3 months)	≤ 3 %	13.0 %	15.87%	9.37%	7.69 %	17.54 %
Wet average (kg)	≥8.5 kg	7.85	7.97	7.99	7.49	8.21
Herd average (kg)	≥5.5 kg	4.2	4.12	4.06	4.98	4.95

10. Salient Research Achievements:

A considerable progress has been made in reduction in the dry period. Also, the wet average improved significantly.

11. Publications: -

12. Constraints if any: Very limited availability of true to breed quality animals of this breed for addition to the herd

13. Focus of work in the coming year: To enhance the herd strength of elite animals, apply effective disease control, improve production, reproduction and produce superior germplasm.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC		Closing balance
Total	ICAR Share		ICAR Share	State Share	
32.00	24.00	24.00	24.00	8.00	Nil

Herd Performance

The herd strength of Nili-Ravi was 145, included 65 breedable buffaloes (> 2 years). Total 51 calves (24 male and 27 female) were born, 9 abortions and 2 still birth during 2021-22. The calf mortality (0-3 months) was increased to 21.05 percent higher than last year 7.69 percent. Conception rate reported 42.14 percent was more than the previous year 41.17 percent. During the report period 3675 frozen semen doses produced/received and 8784 doses disseminated by use in herd/sold to farmers closing balance was 5244 frozen semen doses.

Mean for lactation milk yield, lactation length and 305 or less day lactation milk yield was 2552 kg (32), 299 days and 2485 kg (32) during the period as compared to last year 2511kg (29), 281 days and 2473 kg (29), respectively. The reproductive traits viz: age at first calving, service period, dry period and calving interval was 41.14 months (21), 123 days (34), 139 days (45) and 426 days (45) against last year 40.3 months (12), 110 days (45), 184 days (45) and 418 days (45), respectively. The wet average and herd average reported during the year 8.21 kg and 4.95 kg as compared to previous year 7.49 kg and 4.98 kg, respectively.

Accomplishment and Targets Achieved

Trait	Target	2017-18	2018-19	2019-20	2020-21	2021-22
Av. Age at first calving (months)	40	42.43 (18)	40.3 (15)	40.9 (18)	40.3 (12)	41.14 (21)
Av. Service period (days)	130	180 (34)	168 (40)	150.4 (35)	110 (45)	123 (34)
Calf mortality (0-3 months)	≤ 3 %	13.0 %	15.87%	9.37%	7.69 %	17.54 %
Wet average (kg)	≥8.5 kg	7.85	7.97	7.99	7.49	8.21
Herd average (kg)	≥5.5 kg	4.2	4.12	4.06	4.98	4.95

Recommendations:

- Efforts should be made to improve the conception rate particularly in heifers.
- Bulls for test and nominated mating should be used as per the technical programme.
- Calf mortality is on higher side and emphasis should be given to improve calf management and health care to reduce calf mortality.

NETWORK PROJECT ON BUFFALO IMPROVEMENT (FIELD UNITS)

Participating Units : **1. CIRB, Hisar**
2. GADVASU, Ludhiana
3. NDRI, Karnal

Date of start : 2001

INTRODUCTION:

Murrah is most important breed among milch buffaloes which draws maximum demand of its germplasm in the country. But the problem of non-availability of genetically superior and progeny tested bulls is acute to meet everincreasing demand for improvement of the country buffaloes. It is, therefore, essential to develop superior germplasm and test them efficiently on large organized herds as well as the ones available with the farmers. Progeny testing under institutional and field conditions besides providing superior bulls for use in developmental programme, helps in developing elite breeding herds. Buffalo herds available with various research institutions and those managed by the state/central government developmental agencies are too small in size to independently implement a worthwhile progeny testing programme for even a moderately accurate evaluation of bulls. It is more desirable to evaluate the bulls on the basis of their progeny performance raised in different environments at various associated organized as well as at the farmers herds.

OBJECTIVES:

To strengthen the on going sire evaluation programme of associated herd progeny testing by including field performance recording of the daughters of test bulls.

FIELD UNIT: CIRB HISAR

Name of the Institute : Central Institute for Research on Buffaloes, Hisar
Title of the project : Progeny testing of bulls under field conditions (FPT)
Principal Investigator : Dr A Bharadwaj, Principal Scientist

Technical programme: The use of semen of test bulls under Network Project on Buffalo Improvement on buffaloes in ten adopted villages of CIRB Hisar is to be undertaken. This has to be followed by pregnancy diagnosis, calving records, tagging and follow up of progenies till the completion of first lactation for milk records on the basis of monthly test day recording. Data on different aspects to be recorded as per specified format.

Report of the Project (April 2021– March 2022): Under field progeny testing program (FPT) semen of test bulls is used for artificial insemination in the field, followed by pregnancy diagnosis, calving records and follow up of progenies till the completion of first lactation for milk records on the basis of monthly test day recording. During the period from April 2021 to March 2022, 3167 artificial inseminations were performed using test bulls of 19th and 20^{th} set. The use 20^{th} set was initiated from Jan 2022. The conception rate in the field was worked out to be 56.91%. In this period 1404 pregnancies were confirmed and 1434 calving (males 688, females 746) were recorded. In addition, 217 progenies, 4 of 15^{th}, 116 of 16^{th} and 97 of 17^{th} set were also calved and monthly test day milk yield were/ being recorded. The average age at first calving for these 217 daughters was 40.66 months. During the period 336 daughters were recorded, out of which 220 daughters completed the lactation, 7 daughters dried before seven monthly recordings, 38 daughters sold before the lactation

was completed and recording of 71 daughters are in progress. The physical identification using ear tagging has been done in all female progenies born in the field till Nov 2021 and being done for progenies born thereafter. As on 31st March 2022, 1246 female progenies of 16th to 19th set of different age are standing at various field unit centres for future recordings.

F 1. Herd Strength of Registered females under field unit during 2021-22

Name of Village	OB	*Addition*	*Deduction*		CB
		New Reg. (Birth/ Purchase)	Sold	Death	
	--				

F 2. Status of Breedable females under field unit during 2021-22

Name of Village	Heifers >2 ½ years		*Buffalo (NP)*		*Buffalo Pregnant*	
	Total	Pregnant	In milk	Dry	In milk	Dry
	--					

F 3. Month-wise AI at Different Field Unit Centres during 2021-22

Months	Centre/ Village										Total
	Beed	Juglan	Dhiktana	Kheri	Jewra	Kirara/ Syamsukh	Sarsod	Bichpari	Bado	Bugana	
April 21	13	29	10	11	24	6	23	26	9	13	**164**
May	13	11	1	13	6	1	20	12	6	7	**90**
June	15	27	23	21	26	10	38	25	11	5	**201**
July	21	41	15	23	25	12	22	22	13	5	**199**
Aug	25	41	20	27	21	13	27	48	21	5	**248**
Sept	38	79	20	34	32	12	34	39	19	13	**320**
Oct	51	62	50	33	88	9	40	43	24	16	**416**
Nov	65	72	37	47	46	25	28	27	31	23	**401**
Dec	65	77	32	48	40	17	47	42	34	26	**428**
Jan 22	51	50	19	37	30	15	42	33	29	9	**315**
Feb	40	36	16	32	25	12	21	17	19	8	**226**
March	21	14	16	24	16	7	16	20	16	9	**159**
Total	**418**	**539**	**259**	**350**	**379**	**139**	**358**	**354**	**232**	**139**	**3167**

F 4. Bull-wise AI at Different Field Unit Centres during the Period 4/2021 to 3/2022

Month	1315 XIX	2674 XIX	2737 XIX	2759 XIX	5181 XIX	5246 XIX	5310 XIX	5320 XIX	5333 XIX	5374 XIX	7604 XIX	2848 XX	3004 XX	5427 XX	7584 XX	7649 XX	Total
April 21	-	-	-	55	-	-	1	30	36	10	32	-	-	-	-	-	**164**
May	-	13	-	35	-	-	1	1	23	4	13	-	-	-	-	-	**90**
June	7	58	-	7	-	-	-	-	129	-	-	-	-	-	-	-	**201**
July	61	5	-	-	-	-	-	109	21	-	3	-	-	-	-	-	**199**
Aug	83	-	-	-	-	-	-	40	-	1	124	-	-	-	-	-	**248**
Sept	179	46	28	-	-	-	-	-	1	-	66	-	-	-	-	-	**320**
Oct	25	51	39	-	109	-	83	-	100	-	9	-	-	-	-	-	**416**
Nov	104	9	-	-	1	2	29	-	69	125	62	-	-	-	-	-	**401**
Dec	-	111	45	-	-	134	-	2	43	1	92	-	-	-	-	-	**428**
Jan 22	-	-	51	-	-	-	1	115	-	-	18	-	-	7	123	-	**315**
Feb	-	-	-	-	-	-	-	-	-	-	-	73	-	123	30	-	**226**
March	-	-	-	-	-	-	-	-	-	-	-	36	28	-	1	94	**159**
Total	**459**	**293**	**163**	**97**	**110**	**136**	**115**	**297**	**422**	**141**	**419**	**109**	**28**	**130**	**154**	**94**	**3167**

F 5. Month-wise Conception at Different Field Unit Centres during 2021-22

Months	**Centre/ Village**										**Total**
	Beed	**Juglan**	**Dhiktana**	**Kheri**	**Jewra**	**Kirara/Syamsukh**	**Sarsod**	**Bichpari**	**Baado**	**Bugana**	
April 21	25	25	14	18	22	5	19	25	14	10	**177**
May	20	20	10	12	16	2	20	17	9	9	**135**
June	14	11	3	8	8	4	9	8	7	4	**76**
July	8	15	2	6	16	4	11	14	5	3	**84**
Aug	8	7	0	7	4	1	10	5	3	1	**46**
Sept	8	16	9	11	16	7	17	11	5	2	**102**
Oct	12	22	7	10	17	7	12	13	7	3	**110**
Nov	16	25	9	13	15	8	18	28	9	4	**145**
Dec	22	41	11	18	16	6	19	24	10	7	**174**
Jan 22	31	40	26	17	49	8	21	28	13	9	**242**
Feb	42	46	20	24	32	17	19	16	14	10	**240**
March	42	53	17	21	23	14	33	27	19	12	**261**
Total	**248**	**321**	**128**	**165**	**234**	**83**	**208**	**216**	**115**	**74**	**1792**

F 6. Bull-wise Conception at Different Field Unit Centres during the Period 4/2021 to 3/2022

Months							Bull No					Total
	1315 XIX	2674 XIX	2737 XIX	2759 XIX	5181 XIX	5246 XIX	5310 XIX	5320 XIX	5333 XIX	5374 XIX	7604 XIX	
April 21	-	-	-	-	-	-	66	57	-	54	-	**177**
May	-	-	-	5	-	-	25	25	35	45	-	**135**
June	-	-	-	39	-	-	-	10	22	5	-	**76**
July	-	-	-	30	-	-	1	14	14	5	20	**84**
Aug	-	5	-	15	-	-	1	1	12	-	12	**46**
Sept	5	23	-	2	-	-	-	-	72	-	-	**102**
Oct	32	3	-	-	-	-	-	63	10	-	2	**110**
Nov	49	-	-	-	-	-	-	21	-	1	74	**145**
Dec	99	25	17	-	-	-	-	-	1	-	32	**174**
Jan 22	16	23	18	-	68	-	51	-	60	-	6	**242**
Feb	59	5	-	-	-	2	17	-	45	81	31	**240**
March	-	67	30	-	-	76	-	2	29	1	56	**261**
Total	**260**	**151**	**65**	**91**	**68**	**78**	**161**	**193**	**300**	**192**	**233**	**1792**

F 7. Month-wise Calving at Different Field Unit Centres during 2021-22

Month	Centre/Village																				Total	
	Beed		Juglan		Dhiktna		Kheri		Jewra		Kirara/ Syamsukh		Sarsod		Bichpari		Bado		Bugana			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
April 21	8	8	5	3	5	3	1	1	7	9	2	1	8	8	7	6	1	2	4	3	**48**	**44**
May	6	3	7	6	4	3	0	1	7	6	0	2	6	4	5	5	3	2	7	3	**45**	**35**
June	4	7	12	9	1	2	0	1	14	13	0	0	7	8	7	11	2	2	2	1	**49**	**54**
July	16	20	19	22	3	1	6	5	7	9	3	4	7	13	15	9	3	4	2	2	**81**	**89**
Aug	25	23	17	16	2	5	9	7	14	18	5	4	19	14	13	13	4	3	2	2	**110**	**105**
Sept	13	19	19	19	4	2	8	8	15	22	3	5	10	19	14	15	7	5	0	0	**93**	**114**
Oct	18	18	15	18	1	2	9	5	3	15	5	3	16	13	7	12	7	5	3	1	**84**	**92**
Nov	11	12	9	11	4	1	8	8	5	13	1	3	7	6	11	8	5	5	0	0	**61**	**67**
Dec	7	10	8	10	3	2	5	5	5	10	1	1	6	6	7	6	4	3	0	1	**46**	**54**
Jan 22	6	6	6	5	1	1	3	3	2	6	1	3	3	3	2	4	3	2	0	1	**27**	**34**
Feb	5	3	5	6	0	0	2	3	5	10	1	3	4	4	4	6	3	2	0	0	**29**	**37**
March	2	4	3	3	0	0	3	2	1	3	0	1	3	4	2	3	1	1	0	0	**15**	**21**
Total	**121**	**133**	**125**	**128**	**28**	**22**	**54**	**49**	**85**	**134**	**22**	**30**	**96**	**102**	**94**	**98**	**43**	**36**	**20**	**14**	**688**	**746**

F 8. Bull-wise Calving at Different Field Unit Centres during the Period 4/2021 to 3/2022

Month	Bull No																							
	2689 XVIII		4995 XVIII		1208 XVIII		1209 XVIII		1219 XVIII		7147 XVIII		7227 XVIII		7263 XVIII		2674 XIX		2737 XIX		2759 XIX		5181 XIX	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
April 21	4	6	-	-	8	6	0	1	-	-	-	-	-	-	-	-	-	-	12	15	2	1	-	-
May	1	0	-	-	8	1	-	-	-	-	-	-	-	-	9	8	16	16	-	-	10	10	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	15	25	28	-	-	22	9	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	38	30	27	-	-	1	0	14	20
Aug	-	-	-	-	-	-	-	-	24	18	15	24	4	4	4	4	37	40	-	-	11	11	-	-
Sept	-	-	1	0	-	-	-	-	25	21	28	48	21	26	-	-	-	-	-	-	-	-	13	7
Oct	-	-	-	-	-	-	-	-	-	-	2	3	15	17	-	-	-	-	-	-	-	-	24	21
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1
Dec	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-
Jan 22	-	-	-	-	-	-	-	-	-	-	-	-	18	16	-	-	-	-	6	5	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	10	13	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	2	1	-	-	6	6	-	-	-	-	16	12	4	5	-	-
Total	**5**	**6**	**1**	**0**	**16**	**7**	**0**	**1**	**51**	**40**	**45**	**75**	**75**	**86**	**52**	**65**	**108**	**111**	**34**	**32**	**50**	**36**	**51**	**49**

Cont..F8

Month	Bull No														
	5232 XIX		5246 XIX		5310 XIX		5320 XIX		5333 XIX		5374 XIX		7604 XIX		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
April 21	4	2	-	-	-	-	-	-	-	-	-	-	-	-	**48**	**44**
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**45**	**35**
June	-	-	10	11	-	-	-	-	-	-	-	-	-	-	**49**	**54**
July	-	-	26	24	-	-	-	-	-	-	-	-	-	-	**81**	**89**
Aug	1	1	26	15	-	-	-	-	-	-	-	-	-	-	**110**	**105**
Sept	26	20	14	17	4	2	-	-	-	-	-	-	-	-	**93**	**114**
Oct	-	-	-	-	32	35	7	9	-	-	28	28	-	-	**84**	**92**
Nov	-	-	-	-	22	23	21	21	-	-	18	23	-	-	**61**	**67**
Dec	-	-	-	-	10	11	8	12	9	13	18	14	-	-	**46**	**54**
Jan 22	-	-	-	-	-	-	2	3	7	11	0	4	-	-	**27**	**34**
Feb	-	-	-	-	0	1	5	7	7	7	0	1	7	8	**29**	**37**
March	-	-	-	-	0	1	-	-	4	5	-	-	3	8	**15**	**21**
Total	**31**	**23**	**76**	**67**	**68**	**73**	**43**	**52**	**27**	**36**	**64**	**70**	**10**	**16**	**688**	**746**

F 9. Bull-wise Live Female Progeny at Different Field Unit Centers (0-6month) as on 3/2022

Bull No. Centres	2674 XIX	2737 XIX	2759 XIX	5310 XIX	5320 XIX	5333 XIX	5374 XIX	7604 XIX	Total
Beed	5	6	1	1	2	3	1	5	**24**
Juglan	3	6	1	1	3	2	1	1	**24**
Dhiktana	1	1	1	-	-	6	-	-	**4**
Kheri	-	1	-	-	-	1	1	-	**16**
Jewra	-	-	1	-	1	1	1	1	**24**
Kirara	1	1	-	-	-	2	1	2	**8**
Sarsod	5	-	1	-	1	2	2	3	**17**
Bichpari	1	1	1	-	2	1	-	3	**20**
Bado Patti	1	-	-	-	2	-	-	-	**12**
Bugana	-	1	1	-	1	2	1	-	**3**
Total	**17**	**17**	**7**	**2**	**12**	**20**	**8**	**15**	**152**

F 10. Bull-wise Live Female Progeny at Different Field Unit Centers (6-12month) as on 3/2022

Bull No. Centres	1208 XVIII	1219 XVIII	2689 XVIII	7147 XVIII	7227 XVIII	2674 XIX	2737 XIX	2759 XIX	5181 XIX	5232 XIX	5246 XIX	Total
Beed	-	1	1	-	-	1	10	5	2	15	11	**46**
Juglan	1	-	1	-	-	5	6	4	4	13	4	**38**
Dhiktana	-	1	-	1	-	1	6	-	2	2	1	**14**
Kheri	-	1	-	-	-	2	1	1	3	3	2	**13**
Jewra	2	1	1	-	1	2	5	1	6	12	5	**36**
Kirara	-	-	-	-	-	3	1	1	1	2	2	**10**
Sarsod	-	5	-	-	3	2	10	-	5	8	9	**42**
Bichpari	-	3	-	1	-	5	6	-	5	9	7	**36**
Bado Patti	-	-	-	1	-	-	3	1	2	2	2	**11**
Bugana	-	-	-	2	-	1	-	-	-	2	2	**7**
Total	**3**	**12**	**3**	**5**	**4**	**22**	**48**	**13**	**30**	**68**	**45**	**253**

F 11. Bull-wise Live Female Progeny at Different Field Unit Centers (1-3 years) as on 3/2022

Bull No. Centres	2558 XVII	2565 XVII	2594 XVII	2607XVII	4687XVII	4733XVII	4837 XVII	1148 XVII	53M XVII	B1/330 XVII	6942 XVII	7010 XVII	Sikander	Dara XVII	Total
Beed	3	4	2	2	-	-	2	2	1	6	5	4	4	3	**38**
Juglan	1	4	1	2	-	1	7	-	1	7	4	5	2	8	**45**
Dhiktana	-	1	1	-	-	-	4	2	6	4	1	-	-	7	**26**
Kheri	1	1	1	-	-	-	-	-	-	4	4	1	1	-	**13**
Jewra	-	-	2	2	-	-	2	2	3	1	2	4	3	3	**24**
Kirara	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**1**
Sarsod	1	7	6	-	-	2	2	2	8	4	5	7	9	7	**60**
Bichpari	-	-	3	3	-	-	1	1	5	2	2	-	5	4	**26**
Bado Patti	-	-	-	-	-	-	-	-	1	4	3	-	1	-	**9**
Bugana	-	-	1	-	1	-	-	-	-	1	1	3	1	2	**10**
Total	**6**	**17**	**17**	**9**	**1**	**3**	**18**	**9**	**25**	**33**	**29**	**24**	**27**	**34**	**252**

Cont..

Bull No. Centres	1150 XVIII	1208 XVIII	1209 XVIII	1219 XVIII	2645 XVIII	2676 XVIII	2677 XVIII	2689 XVIII	4905 XVIII	4995 XVIII	5147 XVIII	7094 XVIII	7147 XVIII	7227 XVIII	7263 XVIII	Total
Beed	9	11	7	6	4	6	6	4	8	8	5	6	2	6	-	**88**
Juglan	8	12	7	5	7	6	6	3	7	10	5	4	1	2	2	**85**
Dhiktana	3	1	-	1	3	1	2	7	-	1	1	7	-	1	2	**30**
Kheri	2	4	-	1	-	-	1	1	1	-	1	1	4	-	2	**18**
Jewra	3	1	1	1	3	1	2	2	4	4	2	-	3	1	1	**29**
Kirara	2	1	-	-	-	1	-	2	1	2	1	2	-	-	-	**12**
Sarsod	9	4	3	1	8	8	5	2	6	5	7	3	3	8	-	**72**
Bichpari	1	3	6	5	5	4	3	5	1	6	6	7	1	3	3	**59**
Bado Patti	1	-	-	-	4	2	4	-	1	-	-	2	-	-	1	**15**
Bugana	3	3	2	-	-	4	2	3	2	-	4	5	1	1	1	**31**
Total	**41**	**40**	**26**	**20**	**34**	**33**	**31**	**29**	**31**	**36**	**32**	**37**	**15**	**22**	**12**	**439**

F 12. Bull-wise Live Female Progeny at Different Field Unit Centers (> 3 years) as on 3/2022

Bull No. Centres	1027 XVI	1053 XVI	1064 XVI	2383 XVI	4592 XVI	4705 XVI	4889 XVI	M29 XVI	M51 XVI	6379 XVI	6646 XVI	6753 XVI	Total
Beed	1	-	1	-	-	-	2	-	-	1	-	3	**8**
Juglan	-	-	-	-	-	-	-	-	-	-	-	-	-
Dhiktana	1	-	-	1	-	-	-	-	1	-	-	-	**3**
Kheri	-	-	--	-	2	2	-	-	-	-	-	-	**4**
Jewra	-	-	-	-	-	-	-	-	-	-	-	-	
Kirara	1	-	-	-	-	-	-	-	-	-	1	-	**2**
Sarsod	1	1	-	-	-	-	-	-	1	-	-	-	**3**
Bichpari	-	-	-	-	-	-	-	-	-	-	-	-	-
Bado Patti	-	1	-	-	2	-	-	1	-	-	-	-	**4**
Bugana	1	-	-	-	-	-	-	-	1	-	-	-	**2**
Total	**5**	**2**	**1**	**1**	**4**	**2**	**2**	**1**	**3**	**1**	**1**	**3**	**26**

Cont.. F 12.

Bull No. Centres	2558 XVII	2565 XVII	2594 XVII	2607 XVII	4687 XVII	4715 XVII	4733 XVII	4837 XVII	1148 XVII	53M XVII	B1/330 XVII	7010 XVII	Sikander	Dara XVII	Total
Beed	1	2	2	2	6	5	5	3	1	-	2	2	-	-	**31**
Juglan	1	1	1	-	2	2	2	3	5	2	1	2	-	1	**23**
Dhiktana	-	1	-	2	-	-	1	-	3	-	-	-	-	1	**8**
Kheri	2	-	1	4	1	-	-	1	2	-	-	-	-	-	**11**
Jewra	1	-	-	-	1	2	2	2	1	1	-	1	-	1	**12**
Kirara	1	-	-	-	-	-	-	-	-	-	-	1	1	-	**3**
Sarsod	1	3	-	1	4	3	1	3	-	1	-	-	-	-	**17**
Bichpari	-	2	1	-	-	1	1	-	1	-	-	1	-	1	**8**
Bado Patti	1	-	1	-	1	-	-	-	-	-	-	-	-	-	**3**
Bugana	2	-	-	-	1	1	-	-	-	-	1	1	1	-	**7**
Total	**10**	**9**	**6**	**9**	**16**	**14**	**12**	**12**	**13**	**4**	**4**	**8**	**2**	**4**	**123**

F 13. Bull-wise Daughters Calved at Different Field Units during 2021-2022

Bull No. Centres	2417XV	2429 XV	6405 XV	1027 XVI	1053 XVI	1064 XVI	2383 XVI	2467 XVI	2501 XVI	4592 XVI	4705 XVI	4889 XVI	M29 XVI	M51 XVI	6379 XVI	6409 XVI	6646 XVI	6753 XVI	**Total**
Beed	1	-	1	2	4	-	3	1	1	1	1	-	1	3	-	2	2	3	**26**
Juglan	-	-	-	-	3	1	-	-	1	-	-	-	5	-	4	-	-	2	**16**
Dhiktana	-	-	-	1	-	-	-	-	-	1	-	1	-	2	-	-	1	-	**6**
Kheri	-	-	1	-	1	-	-	2	-	6	-	-	1	-	-	-	-	-	**11**
Jewra	-	-	-	-	-	1	-	-	-	1	-	-	2	4	-	3	2	2	**15**
Kirara	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1	2	**5**
Sarsod	-	1	-	1	-	-	-	3	-	1	-	2	1	4	-	-	-	1	**14**
Bichpari	-	-	-	-	-	1	1	1	3	1	-	1	-	3	1	3	1	1	**17**
Bado	-	-	-	1	1	-	-	-	-	1	-	-	1	-	2	-	-	-	**6**
Bugana	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	**4**
Total	**1**	**1**	**2**	**5**	**10**	**3**	**4**	**7**	**7**	**14**	**1**	**4**	**11**	**17**	**7**	**8**	**7**	**11**	**120**

Cont..

Bull No. Centres	2558 XVII	2565 XVII	2594 XVII	2607 XVII	4687 XVII	4715 XVII	4733 XVII	4837 XVII	1148 XVII	53M XVII	B1/330 XVII	7010 XVII	Sikander	Dara XVII	**Total**
Beed	-	1	-	-	1	-	1	-	2	1	1	-	1	-	**8**
Juglan	1	1	-	-	3	1	-	1	-	-	-	-	-	-	**7**
Dhiktana	1	1	1	1	-	3	1	-	-	-	-	1	-	-	**9**
Kheri	3	-	1	-	-	-	2	-	-	-	-	-	-	-	**6**
Jewra	-	2	1	-	1	-	2	2	-	-	-	2	-	1	**11**
Kirara	1	-	-	-	-	-	1	-	-	-	-	-	-	-	**2**
Sarsod	3	-	3	5	4	3	3	5	-	1	-	1	-	-	**28**
Bichpari	2	2	3	1	-	3	3	1	2	-	-	-	-	1	**18**
Bado	1	-	1	-	-	-	1	-	-	1	-	-	-	-	**4**
Bugana	-	-	-	1	1	-	-	1	-	-	-	-	-	1	**4**
Total	**12**	**7**	**10**	**8**	**10**	**10**	**14**	**10**	**4**	**3**	**1**	**4**	**1**	**3**	**97**

F 14. Bull-wise Daughters Recorded at Different Field Units Centres during the Period 4/2021 to 3/2022

Field Units	Bull No.	Dgtr No.	Date of Birth	Date of Calving	Monthly Milk Records																	
					I		II		III		IV		V		VI		VII		VIII		IX		X	
					M	E	M	E	M	E	M	E	M	E	M	E	M	E	M	E	M	E	M	E
Beed																								
	6379 XVI	722	30/09/17	27/06/20	3.0	3.0	4.8	4.7	5.0	5.0	4.0	4.0	4.0	4.0	3.5	3.5	3.3	3.2	3.0	3.0	4.0	0.0	3.0	0.0
	4889 XVI	421	27/11/16	03/07/20	4.5	4.5	4.0	4.0	5.3	5.2	4.5	4.5	4.3	4.2	4.0	4.0	3.8	3.7	3.5	3.5	2.5	2.5	4.0	0.0
	6139 XV	568	28/08/16	10/07/20	3.8	3.7	4.5	4.5	5.8	5.7	4.8	4.7	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	2.0	2.0	2.0	2.0
	4438 XV	521	04/04/16	16/07/20	4.0	4.0	4.3	4.2	4.5	4.5	5.8	5.7	4.5	4.5	4.3	4.2	4.0	4.0	4.0	4.0	3.0	3.0	2.5	2.5
	4705 XVI	617	13/12/16	20/07/20	4.0	4.0	5.5	5.5	5.5	5.5	4.0	4.0	5.0	5.0	5.0	5.0	3.5	3.5	3.8	3.7	3.0	3.0	3.0	3.0
	6290 XV	556	02/08/16	09/08/20	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.3	4.2	3.3	3.2	3.0	3.0	2.5	2.5	2.0	2.0	3.0	0.0
	M-29 XVI	724	29/09/17	29/09/20	4.0	4.0	4.5	4.5	5.0	5.0	4.5	4.5	5.0	5.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	2.5	2.5
	4328 XV	598	31/10/16	18/10/20	4.3	4.2	4.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	2.5	2.5	2.0	2.0	2.0	2.0
	1064 XVI	761	12/12/17	19/10/20	4.0	4.0	4.5	4.5	4.5	4.5	4.0	4.0	4.5	4.5	3.8	3.7	4.0	4.0	3.0	3.0	3.0	0.0	3.0	0.0
	6646 XVI	710	12/09/17	20/10/20	3.5	3.5	5.0	5.0	4.8	4.7	5.0	5.0	5.5	5.5	5.0	5.0	5.0	5.0	3.0	3.0	2.5	2.5	2.0	2.0
	1064 XVI	782	02/03/18	29/10/20	5.0	5.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	6.0	5.0	5.0	3.5	3.5	3.5	3.5	3.0	3.0	3.0	0.0
	6409 XVI	636	27/01/17	03/11/20	5.0	5.0	5.0	5.0	5.3	5.2	5.5	5.5	5.8	5.7	4.0	4.0	4.0	3.5	3.5	3.5	2.8	2.7	3.0	0.0
	1053 XVI	665	26/05/17	06/11/20	4.0	4.0	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	3.0	3.0	4.0	4.0	3.5	3.5	4.0	0.0
	1064 XVI	780	23/02/18	02/12/20	4.0	4.0	4.3	4.2	4.5	4.5	5.5	5.5	4.3	4.2	4.0	4.0	4.0	4.0	3.5	3.5	3.0	0.0	3.0	0.0
	6409 XVI	648	18/03/17	05/01/21	4.0	4.0	4.5	4.5	4.5	4.5	4.3	4.2	3.0	3.0	3.5	3.5	2.5	2.5	2.5	0.0	2.0	0.0	2.0	0.0
	6290 XV	547	10/07/16	20/01/21	3.5	3.5	4.0	4.0	5.0	5.0	4.5	4.5	3.8	3.7	4.0	4.0	3.8	3.7	4.0	0.0	3.5	0.0	3.0	0.0
	2459 XV	508	02/02/16	26/01/21	4.5	4.5	5.0	5.0	5.0	5.0	3.5	3.5	4.3	4.2	4.0	4.0	4.0	0.0	3.0	0.0	3.0	0.0	2.5	0.0
	4705 XVI	599	04/11/16	12/02/21	4.5	4.5	5.5	5.5	5.5	5.5	5.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.3	3.2	3.0	3.0	2.5	2.5
	4889 XVI	705	06/09/17	22/02/21	5.0	5.0	4.5	4.5	4.5	4.5	4.3	4.2	4.0	4.0	3.0	3.0	2.5	2.5	2.5	2.5	3.5	0.0	3.0	0.0
	M-51 XVI	700	27/08/17	23/02/21	4.0	4.0	4.5	4.5	4.3	4.3	4.0	4.0	3.8	3.7	3.3	3.2	3.0	3.0	2.5	2.5	4.0	0.0	3.0	0.0
	2383 XVI	769	06/01/18	16/03/21	4.0	4.0	3.5	3.5	5.5	5.5	4.8	4.7	5.0	5.0	4.0	3.5	3.3	3.2	3.0	3.0	2.5	2.5	4.0	0.0
	6405 XV	577	20/09/16	07/04/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2417 XV	566	23/08/16	24/04/21	4.0	4.0	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	3.8	3.7	3.3	3.2	3.0	3.0	3.0	2.0
	4687 XVII	820	30/07/18	03/05/21	3.8	3.8	5.0	5.0	5.3	5.2	5.0	5.0	5.0	5.0	4.8	4.7	4.5	4.5	4.0	4.0	3.5	3.5	2.8	2.7
	6646 XVI	645	01/03/17	13/05/21	4.0	4.0	5.5	5.5	5.5	5.5	4.5	4.5	4.3	4.2	4.3	4.2	4.0	4.0	4.8	4.7	3.5	3.5	3.0	3.0
	6409 XVI	649	20/03/17	16/05/21	3.5	3.5	4.3	4.2	4.5	4.5	4.8	4.7	4.5	4.5	4.8	4.7	4.3	4.2	4.0	4.0	3.8	3.7	3.3	3.2
	1027 XVI	654	01/04/17	18/05/21	4.5	4.5	4.0	4.0	4.8	4.7	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	2.5	2.5
	1027 XVI	739	20/10/17	25/05/21	3.0	3.0	3.5	3.5	4.0	4.0	4.3	4.2	4.0	4.0	3.5	3.5	3.5	3.5	3.0	3.0	3.0	0.0	3.0	0.0
	1053 XVI	656	18/04/17	12/07/21	4.0	4.0	3.0	3.0	4.5	4.5	5.0	5.0	4.8	4.7	4.5	4.5	4.3	4.2	4.0	4.0	3.5	3.5		
	1053 XVI	657	28/04/17	21/07/21	3.5	3.5	5.0	5.0	5.3	5.2	5.0	5.0	4.5	4.5	4.5	4.5	4.3	4.2	3.8	3.7				
	2383 XVI	735	15/10/17	22/07/21	3.5	3.5	4.3	4.2	4.8	4.7	5.5	5.5	5.0	5.0	4.8	4.7	4.0	4.0	4.0	4.0				
	B1/330XVII	917	02/05/19	23/07/21	4.0	4.0	4.5	4.5	5.0	5.0	5.5	5.5	5.5	5.5	5.0	5.0	4.3	4.2	3.8	3.7				
	4705 XVI	688	14/08/17	03/08/21	3.5	3.5	4.0	4.0	5.8	5.7	5.0	5.0	5.5	5.0	4.8	4.7	4.0	4.0	3.5	3.5				
	M-51 XVI	692	20/08/17	03/08/21	3.0	3.0	4.3	4.2	4.5	4.5	4.8	4.7	4.0	4.0	4.5	4.5	4.3	4.2	4.0	4.0				
	6646 XVI	745	05/11/17	04/08/21	3.0	3.0	3.5	3.5	4.0	4.0	4.3	4.2	4.0	4.0	4.0	4.0	3.8	3.7	3.5	3.5				
	4592 XVI	746	07/11/17	07/08/21	3.5	3.5	4.0	4.0	4.3	4.2	4.0	4.0	3.8	3.7	4.0	4.0	3.5	3.5	3.5	3.5				
	M-29 XVI	669	25/06/17	08/08/21	4.0	4.0	4.3	4.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	3.8	3.7				
	1053 XVI	686	04/08/17	08/08/21	3.8	3.7	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6753 XVI	800	18/06/18	21/08/21	3.5	3.5	4.0	4.0	4.5	4.5	4.8	4.7	4.5	4.5	4.3	4.5	4.0	4.0						

	2565 XVII	838	09/09/18	26/08/21	4.0	4.0	5.0	5.0	6.0	6.0	5.8	5.7	5.5	5.5	4.8	4.7	4.3	4.2						
	2383 XVI	691	18/08/17	28/08/21	4.0	4.0	4.3	4.2	4.5	4.5	4.5	4.5	4.0	4.0	Sold	x	x	x	x	x	x	x	x	x
	2467 XVI	740	21/10/17	29/08/21	3.5	3.5	4.0	4.0	4.3	4.2	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5						
	6753 XVI	792	02/05/18	10/09/21	3.0	3.0	3.8	3.7	4.0	4.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x
	2501 XVI	651	31/03/17	01/10/21	3.5	3.5	4.3	4.2	4.5	4.5	4.5	4.5	4.3	4.2	4.0	4.0								
	1053 XVI	687	12/08/17	03/10/21	3.0	3.0	4.0	4.0	4.8	4.7	5.0	5.0	4.5	4.5	4.5	4.5								
	4733 XVII	805	02/07/18	23/10/21	3.0	3.2	4.0	4.0	4.3	4.2	4.5	4.5	4.3	4.2										
	1148 XVII	905	05/03/19	24/10/21	3.5	3.5	4.3	4.2	4.5	4.5	4.3	4.2	4.3	4.2										
	M-53 XVII	845	22/09/18	28/10/21	3.5	3.5	4.0	4.0	4.8	4.7	4.5	4.5	4.8	4.7										
	6409 XVI	646	04/03/17	03/11/21	4.0	4.0	4.3	4.2	4.5	4.5	4.8	4.7	4.5	4.5										
	M-51 XVI	696	22/08/17	16/11/21	3.8	3.7	4.0	4.0	4.5	4.5	4.8	4.7	4.5	4.5										
	6753 XVI	796	30/05/18	26/11/21	3.5	3.5	4.3	4.2	4.5	4.5	4.8	4.7												
	1148 XVII	897	15/01/19	02/12/21	4.0	4.0	5.5	5.5	5.0	5.0	5.0	5.0												
	M-51 XVI	741	26/10/17	08/12/21	3.8	3.7	4.5	4.5	5.3	5.2	5.0	5.0												
	2383 XVI	770	08/01/18	24/12/21	4.0	4.0	4.0	4.0	4.3	4.2														
	Siknder XVII	802	28/06/18	28/03/22																				
Juglan																								
	6007 XV	1184	30/09/16	22/06/20	5.0	5.0	5.5	5.5	5.5	5.5	5.0	5.0	4.0	4.0	4.3	4.2	3.5	3.5	3.5	3.5	3.0	3.0	4.0	0.0
	6139 XV	1176	16/09/16	13/07/20	4.0	4.0	4.5	4.5	4.5	4.5	5.5	5.5	4.8	4.7	4.5	4.5	3.3	3.2	3.0	3.0	2.5	2.5	2.3	2.2
	2467 XVI	1213	06/12/16	09/07/20	5.0	5.0	5.5	5.5	5.3	5.2	5.2	5.0	5.0	5.0	5.0	5.0	3.8	3.7	4.0	4.0	3.3	3.2	2.5	2.5
	6646 XVI	1276	17/07/17	27/07/20	4.0	4.0	4.8	4.7	6.0	6.0	5.5	5.5	5.3	5.2	4.0	4.0	3.8	3.7	3.0	3.0	2.5	2.5	3.0	0.0
	6753 XVI	1266	23/06/17	02/08/20	4.3	4.2	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	4.3	4.2	4.0	4.0	3.8	3.7	3.0	3.0	4.0	0.0
	6753 XVI	1307	15/09/17	22/08/20	4.0	4.0	5.0	5.0	5.0	5.0	5.3	5.2	4.0	4.0	4.0	4.0	3.5	3.5	3.0	3.0	3.0	3.0	2.5	0.0
	2383 XVI	1279	22/07/17	26/08/20	4.0	4.0	4.5	4.5	4.5	4.5	4.3	4.2	3.5	3.5	4.3	4.2	3.8	3.7	2.5	2.5	2.0	2.0	3.0	0.0
	6405 XV	1127	21/04/16	27/08/20	4.5	4.5	5.5	5.5	6.0	6.0	5.5	5.5	4.0	4.0	4.3	4.2	4.0	4.0	3.5	3.5	2.5	2.5	2.0	2.0
	M-29 XVI	1259	11/06/17	27/08/20	4.0	4.0	5.0	5.0	4.8	4.7	5.0	5.0	3.5	3.5	3.5	3.5	3.3	3.2	2.5	2.5	2.0	2.0	3.0	0.0
	2467 XVI	1350	09/01/18	28/08/20	5.3	5.2	5.5	5.5	6.3	6.2	6.5	6.5	4.8	4.7	5.0	5.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0
	M-29 XVI	1322	16/10/17	06/09/20	5.0	5.0	6.0	6.0	6.5	6.5	6.3	6.2	4.5	4.5	4.8	4.8	4.0	4.0	4.0	4.0	3.0	3.0	2.5	2.5
	M-51 XVI	1309	19/09/17	25/09/20	5.0	5.0	5.3	5.2	5.0	5.0	4.3	4.2	4.5	4.5	4.3	4.2	3.5	3.5	2.5	2.5	2.3	2.4	4.0	0.0
	4324 XV	1056	05/11/15	05/10/20	4.5	4.5	5.5	5.5	6.0	6.0	5.0	5.0	6.0	6.0	5.0	5.0	4.8	4.7	3.0	3.0	3.0	3.0	2.5	2.5
	6379 XVI	1249	28/04/17	28/09/20	3.0	3.0	4.0	4.0	4.5	4.5	5.0	5.0	5.5	5.5	4.0	4.0	4.0	4.0	2.5	2.5	2.5	2.5	4.0	0.0
	1053 XVI	1258	08/06/17	02/10/20	3.8	3.7	4.3	4.2	4.8	4.7	3.5	3.5	4.0	4.0	4.0	4.0	3.8	3.7	3.3	3.2	3.0	3.0	2.3	2.2
	6753 XVI	1360	10/02/18	08/10/20	4.5	4.5	5.0	5.0	6.0	6.0	4.8	4.7	5.0	5.0	4.5	4.5	4.3	4.2	3.0	3.0	2.5	2.5	2.5	2.5
	M-51 XVI	1293	22/08/17	17/10/20	4.0	4.0	4.5	4.5	5.3	5.2	5.0	5.0	5.0	5.0	4.0	4.0	4.5	4.5	3.5	3.5	3.3	3.2	3.0	3.0
	6405 XV	1179	22/09/16	20/10/20	3.5	3.5	5.0	5.0	5.5	5.5	4.5	4.5	4.8	4.7	4.5	4.5	4.0	4.0	3.3	3.2	3.0	3.0	2.0	2.0
	4328 XV	1188	11/10/16	28/10/20	4.0	4.0	5.0	5.0	5.0	5.0	4.5	4.5	5.0	5.0	4.3	4.2	2.5	2.5	2.5	2.5	4.0	0.0	3.0	0.0
	6379 XVI	1312	21/09/17	03/11/20	4.0	4.0	5.0	5.0	5.5	5.5	6.0	6.0	5.5	5.5	5.0	5.0	4.0	4.0	3.8	3.7	4.0	4.0	4.0	0.0
	6646 XVI	1331	07/11/17	27/11/20	4.5	4.5	4.3	4.2	4.5	4.5	4.3	4.2	4.0	4.0	3.5	3.5	3.0	3.0	3.0	3.0	4.0	0.0	4.0	0.0
	6409 XVI	1301	08/09/17	24/01/21	4.5	4.5	5.5	5.5	6.3	6.2	4.0	4.0	3.5	3.5	3.5	3.0	3.0	3.0	4.0	0.0	3.0	0.0	3.0	0.0
	6753 XVI	1297	02/09/17	03/05/21	4.0	4.0	5.5	5.5	5.5	5.5	4.5	4.5	4.3	4.2	4.0	4.0	3.5	3.5	3.5	3.5	3.3	3.2	2.5	2.5
	4715 XVII	1402	22/07/18	03/05/21	5.0	5.0	5.3	5.2	5.0	5.0	4.5	4.5	4.0	4.0	4.0	4.0	3.8	3.7	3.0	3.0	3.0	3.0	4.0	0.0
	2501 XVI	1271	06/07/17	28/06/21	4.0	4.0	4.3	4.2	4.5	4.5	4.8	4.7	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		
	M-29 XVI	1390	13/06/18	28/06/21	4.5	4.5	4.5	4.5	5.0	5.0	6.5	5.5	5.5	5.5	4.5	4.5	4.3	4.2	4.0	4.0	3.5	3.5		

	4687 XVII	1407	03/08/18	21/07/21	4.3	4.2	4.0	4.0	4.5	4.5	4.3	4.2	4.0	4.0	3.8	3.7	3.5	3.5	2.5	2.5				
	6379 XVI	1378	02/05/18	22/07/21	4.0	4.0	5.0	5.0	5.3	5.2	5.0	5.0	4.5	4.5	4.5	4.5	4.3	4.2	3.8	3.7				
	1053 XVI	1283	05/08/17	25/07/21	3.0	3.0	5.0	5.0	5.0	5.0	4.8	4.7	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0				
	M-29 XVI	1358	03/02/18	26/07/21	3.5	3.5	4.8	4.7	5.0	5.0	5.0	5.0	4.8	4.7	4.3	4.2	4.0	4.0	3.8	3.7				
	1053 XVI	1286	05/08/17	02/08/21	4.0	4.0	4.5	4.5	5.3	5.2	4.8	4.7	4.3	4.2	4.0	4.0	4.3	4.2	4.0	4.0				
	1053 XVI	737	14/10/17	10/08/21	3.5	3.5	4.5	4.5	5.0	5.0	5.5	5.5	4.8	4.7	4.5	4.5	3.8	3.7	3.5	3.5				
	4687 XVII	1392	25/06/18	10/08/21	3.5	3.5	5.0	5.0	5.8	5.7	5.3	5.2	5.0	5.0	5.0	5.0	4.5	4.5	4.3	4.2				
	M-29 XVI	1314	28/09/17	17/08/21	4.0	4.0	4.3	4.2	5.0	5.0	5.0	5.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0				
	2565 XVII	1411	15/08/18	22/08/21	4.3	4.2	4.8	4.7	4.5	4.5	4.5	4.5	4.5	4.5	4.3	4.2	4.0	4.0						
	4837 XVII	1452	24/10/18	25/08/21	4.0	4.0	4.5	4.5	5.0	5.0	5.0	5.0	4.8	4.7	4.5	4.5	3.8	3.7						
	M-29 XVI	1429	07/09/18	02/09/21	4.5	4.5	4.0	4.0	4.5	4.5	4.8	4.7	5.0	5.0	5.0	5.0	5.0	5.0						
	1064 XVI	1366	13/03/18	05/09/21	3.5	3.5	4.3	4.2	5.5	5.5	5.3	5.2	5.0	5.0	4.5	4.5	4.0	4.0						
	6753 XVI	1383	20/05/18	17/09/21	3.5	3.5	4.5	4.5	4.0	4.0	5.0	5.0	4.8	4.7	4.3	4.2	3.8	3.7						
	M-29 XVI	1369	21/03/18	23/09/21	3.0	3.0	4.3	4.2	4.5	4.5	4.5	4.5	4.5	4.5	4.3	4.2								
	4687 XVII	1470	11/12/18	25/09/21	4.0	3.5	4.3	4.2	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6379 XVI	1375	25/04/18	02/10/21	3.5	3.5	4.0	4.0	5.0	5.0	5.0	5.0	4.8	4.7	4.5	4.5								
	6379 XVI	1359	07/02/18	09/12/21	4.0	4.0	4.5	4.5	4.3	4.2	4.0	4.0												
	2558 XVII	1401	22/07/18	27/12/21	4.0	4.0	4.5	4.5	4.5	4.5														
	6379 XVI	1373	12/04/18	02/01/22	3.5	3.5	4.3	4.2	4.5	4.5														
Dhiktana																								
	4592 XVI	802	18/09/17	13/07/20	3.5	3.1	4.7	4.2	5.2	4.8	5.5	5.1	5.6	5.3	5.0	4.5	4.5	4.0	3.5	3.1	2.6	2.2	2.3	1.9
	M-51 XVI	813	12/10/17	14/07/20	3.7	3.2	5.2	4.8	5.8	5.4	5.9	5.5	5.7	5.3	5.3	4.9	4.6	4.2	3.7	3.3	2.8	2.4	2.4	2.0
	1027 XVI	776	06/07/17	22/08/20	4.6	4.2	5.3	4.9	5.4	5.0	5.1	4.8	4.8	4.3	3.8	3.4	3.5	3.0	3.3	3.0	2.5	2.0	2.0	1.2
	2501 XVI	800	15/09/17	23/08/20	4.5	4.2	4.9	4.5	5.7	5.3	5.3	4.8	4.9	4.5	3.7	3.3	3.4	3.0	3.0	2.7	2.7	2.3	Sold	x
	2417 XV	755	08/08/16	25/08/20	4.9	4.5	5.5	5.2	5.6	5.2	4.9	4.4	4.8	4.4	3.5	3.2	3.3	3.0	3.1	2.6	3.0	2.5	2.0	0.0
	1064 XVI	825	21/11/17	26/08/20	4.5	4.1	4.8	4.4	5.0	4.6	4.6	4.3	4.3	4.0	4.0	3.6	3.6	3.1	3.2	2.9	2.6	2.4	1.2	0.0
	2383 XVI	807	07/10/17	31/08/20	4.7	4.4	5.1	4.7	5.5	5.0	5.7	5.2	5.5	5.1	4.6	4.2	3.5	3.0	3.3	3.0	3.0	2.5	3.0	2.2
	M-29 XVI	805	05/10/17	14/09/20	3.6	3.2	4.5	4.0	5.4	5.0	5.6	5.2	5.8	5.4	5.4	5.0	4.4	4.2	4.0	3.6	2.5	2.0	Dry	x
	4705 XVI	786	16/08/17	08/10/20	3.7	3.4	4.6	4.2	5.4	5.0	5.9	5.5	5.5	5.1	5.0	4.6	4.4	4.0	4.0	3.5	2.5	3.1	Dry	x
	2383 XVI	811	14/10/17	13/10/20	3.0	3.5	4.5	4.1	5.5	5.1	5.8	5.4	5.6	5.2	5.1	4.6	4.3	3.9	4.0	3.5	5.0	4.5	4.5	4.2
	2383 XVI	781	21/07/17	27/10/20	4.3	4.0	5.6	5.1	5.7	5.2	5.3	4.9	4.6	4.2	4.1	3.6	3.8	3.2	6.0	5.0	4.0	4.5	4.0	3.0
	6646 XVI	822	03/11/17	08/11/20	4.0	3.6	4.6	4.02	5.5	5.0	5.7	5.4	5.9	5.5	4.7	4.4	4.5	4.0	1.2	2.0	2.0	1.5	Dry	x
	M29 XVI	810	19/10/17	23/12/20	4.3	3.9	5.4	5.0	5.7	5.4	5.8	5.5	5.0	4.5	5.2	5.0	5.0	4.5	5.0	4.0	3.0	0.0	Dry	x
	M-51 XVI	833	11/02/18	22/02/21	4.3	3.8	5.4	5.0	5.0	4.6	4.0	3.0	4.2	3.5	4.0	3.5	4.5	4.5	2.0	2.0	2.0	0.0	1.0	0.0
	4889 XVI	764	10/03/17	30/05/21	4.0	3.5	5.0	4.4	5.0	5.0	2.5	2.0	5.5	5.5	4.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	0.0
	M-51 XVI	798	27/09/17	11/07/21	4.0	3.5	6.5	6.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	2.0		
	1027 XVI	829	18/12/17	02/09/21	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	4.0	3.0						
	4715 XVII	850	14/06/18	07/09/21	3.0	3.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	3.0	3.0						
	2607 XVII	865	01/08/18	10/09/21	3.0	2.5	4.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0						
	4733 XVII	851	17/06/18	11/09/21	2.5	2.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	3.0						
	6646 XVI	774	05/06/17	16/09/21	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0						
	4592 XVI	847	28/05/18	21/09/21	5.5	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.0								
	2558 XVII	868	08/08/18	21/09/21	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	3.0	3.0								
	M-51 XVI	814	21/10/17	26/11/21	7.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0												

	7010 XVII	895	23/11/18	07/12/21	5.0	4.0	6.0	5.0	6.0	5.0	6.0	5.0												
	4715 XVII	901	01/01/19	04/01/22	6.0	5.0	6.0	6.0	6.0	6.0														
	2565 XVII	893	11/11/18	10/01/22	3.0	3.0	3.0	3.0	3.0	3.0														
	2594 XVII	897	02/12/18	07/02/22	5.0	5.0	5.0	5.0																
	4715 XVII	862	21/07/18	21/03/22																				
Kheri																								
	2467 XVI	725	31/12/17	09/07/20	4.7	4.2	4.9	4.3	5.5	5.1	5.3	5.0	5.3	5.0	5.4	5.0	5.5	4.9	5.2	4.5	4.0	3.7	4.1	3.7
	4705 XVI	640	04/11/16	10/07/20	5.2	4.9	5.1	4.8	5.5	5.1	5.4	5.0	4.7	4.3	4.5	4.0	4.6	4.0	4.5	4.0	3.7	3.5	2.5	2.0
	M-29 XVI	692	09/08/17	22/08/20	5.7	5.2	5.7	5.3	5.7	5.1	5.6	5.0	5.7	4.7	5.0	4.6	3.7	3.3	3.0	2.5	3.0	2.5	3.0	0.0
	M-29 XVI	674	10/05/17	23/08/20	4.7	4.1	4.4	4.0	5.3	4.8	5.1	4.6	4.6	4.2	4.5	4.1	4.4	4.0	3.2	2.7	3.5	3.0	2.5	2.0
	6405 XV	604	15/06/16	07/09/20	4.5	4.3	4.6	4.3	5.1	4.6	5.3	5.0	4.7	4.3	4.8	4.2	4.7	4.1	3.3	3.0	3.5	3.0	3.0	2.5
	6379 XVI	656	06/01/17	11/10/20	4.5	4.5	5.1	4.6	5.1	4.6	5.1	4.6	5.1	4.5	4.5	4.1	4.3	3.8	4.0	3.5	4.0	3.5	2.5	2.0
	M-51 XVI	695	18/08/17	27/11/20	5.3	5.0	5.1	4.7	5.2	4.7	5.1	4.6	4.5	4.0	4.5	4.0	4.0	3.5	2.0	0.0	2.0	2.0	2.0	2.0
	1053 XVI	706	18/10/17	29/11/20	5.2	4.8	4.7	4.4	4.8	4.5	4.6	4.3	4.3	4.0	4.0	3.5	3.5	3.0	2.5	2.0	3.0	0.0	3.0	0.0
	4705 XVI	704	29/09/17	02/01/21	4.3	4.0	4.5	4.5	5.2	4.7	4.6	4.4	4.5	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.0	3.0	3.0	3.0
	1053 XVI	680	14/06/17	04/02/21	5.1	4.7	5.1	4.7	4.8	4.6	4.5	4.0	4.5	4.0	4.0	3.5	4.0	3.5	4.0	3.5	3.5	3.0	3.5	3.0
	M-29 XVI	676	28/05/17	17/04/21	5.1	4.8	5.0	4.5	5.0	4.5	4.0	3.5	4.5	4.0	4.0	3.5	4.0	3.5	3.5	3.0	3.0	2.5	3.0	0.0
	1053 XVI	671	20/04/17	23/06/21	5.5	5.0	5.0	4.5	5.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.5	3.5	3.5	3.0	3.0	3.0		
	4592 XVI	765	28/07/18	28/07/21	4.5	4.0	4.0	3.5	4.0	3.5	3.5	3.0	3.5	3.0	3.5	3.0	3.5	3.0	3.5	3.0				
	6405 XV	603	08/06/16	02/08/21	5.0	4.5	4.5	4.0	4.0	3.5	4.5	4.0	4.0	3.5	3.5	3.0	4.0	3.5	4.0	3.0				
	4592 XVI	744	04/05/18	04/08/21	4.5	4.0	4.5	4.0	4.5	4.0	5.0	4.5	4.5	4.0	4.5	4.0	3.5	3.0	3.0	2.5				
	4592 XVI	751	09/06/18	23/08/21	4.0	3.5	3.5	3.0	5.0	4.5	4.0	3.5	4.5	3.5	3.5	3.0	3.5	3.0						
	2558 XVII	770	12/08/18	30/08/21	4.5	4.0	4.5	4.0	4.5	4.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0						
	2558 XVII	805	16/12/18	05/09/21	4.5	4.0	4.0	3.5	4.0	4.0	3.5	3.0	4.0	3.5	4.0	3.5	4.0	3.5						
	4592 XVI	767	31/07/18	03/10/21	4.5	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.0	3.5								
	2594 XVII	792	29/10/18	03/10/21	4.0	3.5	4.5	4.0	4.5	4.0	4.0	3.5	5.0	4.5	5.0	4.5								
	2558 XVII	781	11/09/18	11/10/21	5.0	4.5	4.5	4.5	4.0	3.5	4.5	4.0	4.5	4.0	5.0	4.5								
	2467 XVI	696	27/08/17	02/11/21	5.5	5.0	5.0	4.5	5.5	5.0	5.5	5.0	5.5	5.0										
	4733 XVII	783	25/09/18	03/11/21	5.0	4.5	4.5	4.0	4.5	4.0	4.0	4.5	5.0	4.5										
	4733 XVII	779	09/09/18	05/11/21	4.5	4.5	4.0	3.5	4.5	4.0	4.5	4.0	4.5	4.0										
	4592 XVI	749	31/05/18	16/11/21	4.5	4.0	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5										
	2467 XVI	686	13/07/17	19/11/21	4..5	4.0	5.5	5.0	5.0	4.5	5.0	4.5	4.5	4.0										
	4592 XVI	747	14/05/18	19/03/22	5.0	4.5																		
Jewra																								
	4354 XV	835	04/06/16	02/07/20	4.0	4.0	5.0	3.0	4.0	3.0	3.6	2.4	5.2	4.8	3.2	3.8	3.8	3.4	4.0	4.0	4.2	3.5	4.0	3.8
	6139 XV	906	05/11/16	29/07/20	6.0	5.0	5.0	5.0	4.8	4.2	4.4	2.6	4.3	4.7	4.4	4.8	5.1	4.2	4.6	3.4	3.3	3.2	3.0	3.0
	M-29 XVI	1005	19/08/17	01/08/20	4.0	3.0	3.0	3.0	3.1	2.0	4.2	3.8	4.2	3.8	4.3	3.9	4.0	3.0	3.0	3.0	3.0	3.0	4.0	3.5
	M-29 XVI	996	10/08/17	08/09/20	4.0	4.0	4.1	3.9	4.5	3.5	3.2	3.8	3.5	3.9	4.5	4.2	5.3	4.7	4.2	4.3	3.5	3.0	3.0	3.0
	1027 XVI	1028	07/10/17	14/09/20	4.0	4.0	4.3	3.7	5.3	4.7	4.4	4.6	4.3	4.2	4.0	4.0	5.8	3.4	3.5	3.1	4.5	3.0	4.0	3.0
	M-29 XVI	944	26/01/17	15/09/20	4.0	4.0	4.5	4.0	4.2	3.8	3.2	3.8	3.2	3.9	4.6	3.2	4.0	3.0	3.0	3.0	3.5	3.0	3.0	3.0
	6753 XVI	990	15/07/17	22/09/20	3.0	2.0	4.2	3.8	4.2	3.8	4.0	3.8	3.6	3.4	3.0	3.0	2.5	2.3	Sold	x	x	x	x	x
	6646 XVI	969	22/05/17	30/09/20	3.6	2.4	6.2	5.8	5.5	5.5	5.3	5.2	5.1	5.0	4.5	4.3	4.0	4.2	4.0	4.0	4.0	4.0	2.0	2.0
	4889 XVI	1015	18/09/17	21/10/20	4.2	4.8	4.2	3.8	4.3	3.5	4.3	3.0	4.0	3.0	3.4	3.1	4.5	4.0	4.5	4.0	4.0	4.0	3.5	3.0
	1053 XVI	1041	31/10/17	22/10/20	4.2	3.8	4.1	2.9	3.7	2.6	3.0	3.0	2.5	2.5	2.3	2.0	4.0	3.5	3.5	3.0	2.5	2.5	Dry	x

	1064 XVI	1061	09/01/18	15/11/20	4.0	4.0	6.2	5.8	6.3	4.7	6.2	4.1	4.6	4.5	4.3	4.1	4.0	4.0	4.0	4.0	3.5	3.0	3.0	3.0
	1027 XVI	1064	26/01/18	21/12/20	4.3	3.7	4.0	4.0	4.2	3.8	3.3	3.0	3.0	3.0	2.5	2.0	Dry	x	x	x	x	x	x	x
	4889 XVI	1013	23/09/17	28/12/20	6.1	5.9	5.7	5.3	5.1	4.9	5.0	4.8	4.5	4.5	4.0	4.0	4.5	4.0	4.0	3.5	4.0	3.0	4.0	4.0
	4837 XVII	1147	26/09/18	01/01/21	4.0	4.0	3.4	3.1	3.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.5	3.0	3.0	3.0	2.5	2.5	3.5	3.0
	6646 XVI	1069	30/01/18	01/04/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6753 XVI	992	28/07/17	04/04/21	5.2	4.8	4.0	3.5	4.0	3.5	3.5	3.0	3.5	3.0	3.0	3.0	3.5	3.5	3.0	3.0	Dry	x	x	x
	6409 XVI	964	08/05/17	07/04/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Dara XVII	1169	24/10/18	16/06/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	M-51 XVI	1011	01/09/17	21-06-21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1064 XVI	1062	15/01/18	21/06/21	4.5	4.0	4.0	3.5	3.0	3.5	4.5	4.0	Dry	x	x	x	x	x	x	x	x	x	x	x
	M-51 XVI	1071	26/02/18	06/07/21	4.0	4.0	5.0	5.0	4.5	4.0	4.5	4.5	3.5	3.5	3.0	3.0	3.0	3.0	3.5	3.0	3.0	3.0		
	M-29 XVI	1000	16/08/17	22/07/21	4.5	4.0	3.5	3.5	4.0	4.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x
	M-29 XVI	1126	22/07/18	02/08/21	4.0	4.0	4.0	4.0	5.5	5.0	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.0	4.0	4.0				
	6646 XVI	1045	06/11/17	04/08/21	4.5	3.0	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.5	Dry	x	x	x	x	x	x	x	x	x
	6646 XVI	973	22/06/17	09/08/21	4.0	4.0	4.0	3.0	3.5	3.0	Dry	x	x	x	x	x	x	x	x	x	x	x	x	x
	2594 XVII	1182	17/12/18	19/08/21	4.5	4.0	4.0	4.0	4.0	4.0	2.5	2.5	Dry	x	x	x	x	x	x	x	x	x	x	x
	4837 XVII	1150	21/09/18	02/09/21	4.5	4.5	5.0	5.0	4.5	4.0	4.0	4.0	4.0	3.5	4.5	3.0	3.5	3.5						
	4733 XVII	1161	18/10/18	18/09/21	4.5	4.0	4.5	4.0	4.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	Dry	x	x	x	x	x	x	x
	7010 XVII	1106	12/06/18	23/09/21	4.0	4.0	3.0	3.0	2.0	2.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x
	4592 XVI	1021	25/09/17	29/09/21	3.5	3.0	3.0	3.0	2.5	2.5	2.5	2.5	Sold	x	x	x	x	x	x	x	x	x	x	x
	6409 XVI	1092	18/05/18	02/10/21	4.5	3.0	3.5	3.0	3.0	3.0	2.5	2.5	3.5	3.0	2.5	2.5								
	2565 XVII	1137	25/08/18	03/10/21	4.5	4.0	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.5	3.0								
	4837 XVII	1151	22/09/18	07/10/21	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	4.5	3.5	3.5	3.5								
	M-51 XVI	1008	05/09/17	10/10/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6753 XVI	1089	08/05/18	21/10/21	4.5	4.0	4.0	4.0	3.5	3.0	3.5	3.0	3.0	3.0										
	7010 XVII	1178	04/12/18	10/11/21	3.5	3.5	3.0	3.0	2.5	2.5	3.0	3.0	2.5	2.5										
	4733 XVII	1160	15/10/18	18/11/21	4.0	4.0	3.5	3.5	3.5	3.0	3.5	3.5	3.5	3.0										
	4687 XVII	1181	19/12/18	12/12/21	4.0	3.5	4.0	3.0	4.5	3.5	4.0	3.5												
	2565 XVII	1134	25/08/18	08/01/22	4.0	4.0	4.5	4.5	4.5	4.0														
	M-51 XVI	1177	28/12/18	06/02/22	4.0	4.0	4.5	4.0																
Kirara																								
	6405 XV	431	09/10/16	04/07/20	3.0	3.0	6.0	6.0	5.0	5.0	3.4	3.6	4.1	3.9	4.2	3.8	4.3	3.8	4.0	3.0	2.5	2.5	2.0	2.0
	6290 XV	420	01/05/16	21/07/20	5.0	5.0	4.0	4.0	4.1	3.9	3.6	2.4	4.2	3.8	3.8	3.4	3.2	3.1	3.1	2.9	3.0	3.0	Dry	x
	M-29 XVI	458	03/08/17	27/10/20	4.1	3.9	5.2	4.8	5.3	4.2	4.3	4.2	4.3	3.2	4.3	4.2	5.0	5.0	4.5	4.0	2.0	2.0	Dry	x
	6646 XVI	464	05/10/17	05/09/21	4.0	4.0	4.5	4.0	3.0	3.0	2.5	2.5	2.0	2.0	3.5	3.5	3.0	3.0						
	6753 XVI	477	26/02/18	09/10/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	M-51 XVI	487	19/07/18	09/10/21	4.0	4.0	3.5	3.0	3.0	3.0	2.5	2.5	2.5	2.5	2.0	2.0								
	6753 XVI	482	16/05/18	20/10/21	3.5	3.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1053 XVI	481	29/04/18	25/10/21	4.0	4.0	4.0	3.5	3.5	3.5	4.5	4.0	3.5	3.5										
	2558 XVII	491	29/08/18	24/01/22	4.0	4.0	4.0	3.5																
	4733 XVII	493	06/09/18	29/01/22	3.5	3.5	3.5	3.0																
Sarsod																								
	4592 XVI	462	25/07/17	15/07/20	4.8	4.6	4.8	4.6	4.3	4.1	3.9	3.7	6.2	6.0	2.4	2.2	3.2	3.0	2.2	2.0	2.0	0.0	Dry	x
	M-51 XVI	504	30/10/17	24/07/20	6.2	6.0	5.6	5.4	5.3	5.1	4.3	4.1	5.2	5.0	4.7	4.5	4.8	4.6	3.7	3.5	3.3	3.1	3.2	3.1

	4324 XV	381	10/09/16	30/07/20	4.9	4.7	3.9	3.7	5.0	4.8	5.0	4.8	5.8	5.6	5.2	5.2	4.5	4.3	3.9	3.7	2.5	2.3	Dry	x
	1053 XVI	466	06/08/17	08/08/20	5.2	5.0	5.2	5.0	5.6	5.3	4.2	4.0	4.9	4.7	4.7	4.5	3.9	3.7	3.2	3.0	3.2	3.0	3.0	2.7
	6409 XVI	441	10/03/17	29/08/20	5.1	4.9	4.7	4.5	5.6	5.4	3.2	3.0	4.3	4.1	4.3	4.1	4.0	3.8	4.0	3.8	3.4	3.3	2.5	2.3
	4889 XVI	480	01/09/17	02/09/20	4.8	4.6	4.9	4.6	4.7	4.5	4.6	4.4	3.9	3.7	4.8	4.6	4.2	4.0	3.5	3.3	3.8	3.6	3.2	3.0
	2412 XV	385	15/09/16	04/09/20	4.5	4.3	5.8	5.6	5.3	5.1	4.4	4.2	3.7	3.5	4.2	4.0	3.2	3.0	Dry	x	x	x	x	x
	1053 XVI	455	15/06/17	11/09/20	5.2	5.0	5.3	5.1	5.1	4.7	5.2	5.0	3.8	3.5	5.1	4.8	3.8	3.6	3.2	3.0	2.9	2.7	2.0	2.0
	1027 XVI	478	02/09/17	11/09/20	5.2	5.0	4.9	4.7	6.2	6.0	6.0	5.8	4.7	4.5	5.3	5.1	4.7	4.5	2.8	2.6	3.6	3.3	2.4	2.2
	M-29 XVI	436	06/02/17	21/09/20	5.6	5.3	5.8	5.6	5.2	6.0	2.5	2.3	5.8	5.6	5.8	5.5	5.2	5.1	4.2	4.0	2.8	2.6	2.2	2.0
	2383 XVI	500	19/10/17	07/11/20	5.0	4.7	5.2	5.0	5.2	5.0	5.4	5.2	5.7	5.5	5.2	5.0	3.2	3.0	3.2	3.0	2.3	2.1	2.0	1.8
	6409 XVI	434	18/01/17	18/01/21	4.5	4.2	4.9	4.7	5.0	4.8	4.6	4.3	4.3	4.1	3.9	3.7	3.1	3.0	3.0	3.2	2.5	2.0	4.0	0.0
	4592 XVI	511	20/11/17	19/04/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	4715 XVII	563	31/07/18	22/04/21	5.2	5.0	4.8	4.7	4.4	4.1	4.3	4.1	3.5	3.0	2.5	2.0	3.5	3.0	3.5	3.0	1.5	0.0	1.0	0.5
	M-51 XVI	498	12/10/17	15/05/21	5.7	5.5	6.7	6.5	6.8	6.5	5.3	5.1	4.0	3.5	3.5	3.0	4.5	4.0	4.0	3.5	3.0	2.5	2.5	2.0
	M-29 XVI	467	15/08/17	23/05/21	4.8	4.6	4.2	4.0	4.9	4.7	4.5	4.0	4.5	4.0	4.0	3.5	4.0	3.5	2.5	2.0	Dry	x	x	x
	2607 XVII	566	10/08/18	13/06/21	3.2	3.0	3.9	3.7	3.8	3.6	3.5	3.0	2.5	2.0	2.5	2.0	Sold	x	x	x	x	x	x	x
	4837 XVII	592	21/09/18	24/06/21	5.4	5.2	7.3	7.0	6.5	6.0	5.5	5.0	5.5	5.0	5.0	4.5	4.5	4.0	4.5	4.0	2.5	2.0		
	2467 XVI	507	05/11/17	25/06/21	6.5	6.3	5.6	5.4	5.5	5.0	5.5	5.0	4.5	4.0	4.0	3.5	5.0	4.5	5.0	4.5	4.0	3.5		
	1027 XVI	523	09/01/18	30/06/21	4.7	4.5	3.8	3.5	3.5	3.0	3.5	3.0	3.5	3.0	3.0	2.5	3.0	2.5	2.5	2.0	2.0	1.5		
	4687 XVII	575	03/08/18	05/07/21	5.2	5.0	5.2	5.0	5.0	4.5	4.5	4.0	3.5	3.0	5.0	4.5	3.5	3.0	3.0	2.5	3.0	2.5		
	M-51 XVI	561	24/07/18	07/07/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6753 XVI	546	09/05/18	08/07/21	5.2	5.0	5.4	5.2	5.0	4.5	5.0	4.5	4.5	4.0	4.5	4.0	4.0	3.5	4.0	3.5	3.5	3.0		
	4889 XVI	516	03/12/17	23/07/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	M-51 XVI	497	10/10/17	27/07/21	4.2	4.0	5.5	5.0	4.5	4.0	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	3.5	3.0				
	2558 XVII	607	11/10/18	01/08/21	5.0	4.8	5.0	4.5	5.5	5.0	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.5	2.0				
	2594 XVII	599	25/09/18	02/08/21	5.4	5.2	5.0	5.5	5.0	4.5	4.0	3.5	4.5	4.0	5.0	4.5	4.0	3.5	4.0	3.5				
	M-53 XVII	613	22/10/18	02/08/21	4.2	4.0	4.5	4.0	5.5	4.5	4.5	4.0	3.5	3.0	4.0	3.5	4.0	3.5	2.5	2.0				
	4715 XVII	572	16/08/18	12/08/21	4.5	4.3	3.5	3.0	5.5	5.0	4.5	4.0	5.0	4.5	5.0	5.0	3.5	3.0	3.5	3.0				
	2467 XVI	503	03/11/17	19/08/21	4.2	4.0	5.5	5.0	6.0	5.5	6.0	5.5	5.5	5.0	5.0	4.5	4.5	4.0	4.0	3.5				
	4889 XVI	513	29/11/17	25/08/21	6.0	5.5	5.5	5.0	6.5	6.0	5.5	5.0	5.5	5.0	5.0	4.5	4.0	3.5						
	2459 XV	409	03/11/16	03/09/21	5.5	5.0	5.0	4.5	6.0	6.5	5.0	4.5	5.5	5.0	5.5	5.0	5.5	5.0						
	2467 XVI	476	20/08/17	04/09/21	4.5	4.0	4.0	4.5	6.5	6.0	6.0	5.5	4.5	4.0	5.0	4.5	4.5	4.0						
	2607 XVII	573	23/08/18	04/09/21	4.0	3.5	4.0	3.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2594 XVII	553	01/07/18	07/09/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2558 XVII	606	12/10/18	10/09/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	M-51 XVI	643	04/12/18	16/09/21	5.5	5.0	3.5	3.0	6.0	5.5	6.5	6.0	4.5	4.0	4.0	3.5	4.0	3.5						
	4837 XVII	601	04/10/18	18/09/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2558 XVII	633	20/11/18	18/09/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	7010 XVII	670	01/05/19	22/09/21	4.0	4.0	4.5	4.5	6.0	5.5	5.5	5.0	4.5	4.0	4.0	3.5								
	4715 XVII	648	12/01/19	28/09/21	4.5	4.0	5.0	4.5	5.0	4.5	5.5	5.0	5.5	5.0	5.5	5.0								
	4733 XVII	555	23/06/18	07/10/21	5.0	4.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	4837 XVII	636	07/12/18	10/10/21	5.0	4.5	5.0	4.5	4.5	4.0	5.0	4.5	Sold	x	x	x	x	x	x	x	x	x	x	x
	4733 XVII	559	25/07/18	12/10/21	5.5	5.0	4.5	4.0	6.0	5.5	5.5	5.0	5.0	4.5	4.5	4.0								
	2607 XVII	649	07/01/19	13/10/21	5.5	4.5	6.5	6.0	5.0	4.5	6.5	6.0	6.0	5.5	6.0	5.5								
	4733 XVII	585	05/09/18	15/10/21	4.5	4.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

	4837 XVII	617	04/11/18	15/10/21	4.0	3.5	5.0	4.5	4.0	4.5	5.5	5.0	4.5	4.0	4.0	3.5								
	4687 XVII	654	28/01/19	01/11/21	4.0	3.5	4.0	4.5	5.0	4.5	3.0	2.5	2.5	2.0										
	2607 XVII	593	26/09/18	17/11/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	4687 XVII	569	22/08/18	25/11/21	6.0	5.5	6.0	5.5	4.0	3.5	3.5	3.0												
	4837 XVII	618	07/11/18	13/12/21	5.5	5.0	5.0	5.0	6.0	5.5	5.5	5.0												
	4687 XVII	567	13/08/18	26/02/22	3.5	3.0																		
	2594 XVII	597	27/09/18	02/03/22	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2607 XVII	625	15/11/18	02/03/22	3.5	3.0																		
Bichpari																								
	4705 XVI	414	01/08/17	22/07/20	6.3	6.1	6.9	6.7	5.3	5.1	4.7	4.5	5.2	5.0	3.8	3.6	3.8	3.6	3.2	3.0	3.2	3.0	2.2	2.0
	4705 XVI	372	04/11/16	18/08/20	4.9	4.7	5.2	5.2	5.2	5.0	3.7	3.5	5.1	4.9	3.9	3.6	3.2	3.0	3.8	3.6	2.3	2.1	Dry	x
	6290 XV	326	06/08/16	06/09/20	3.9	3.7	4.2	4.0	4.9	4.7	3.9	3.7	4.3	4.1	4.4	4.2	3.0	2.8	2.5	2.3	2.0	1.8	1.5	1.3
	4705 XVI	416	01/08/17	08/09/20	3.7	3.5	5.2	5.0	5.3	5.1	5.3	5.1	5.9	5.7	4.4	4.2	3.6	3.4	3.7	3.5	1.5	1.2	1.3	1.0
	M-51 XVI	420	10/08/17	10/09/20	3.8	3.6	4.3	4.1	4.9	4.7	5.8	5.6	5.2	5.0	4.8	4.6	4.5	4.3	3.0	2.8	3.6	3.4	2.0	1.8
	M-51 XVI	421	19/08/17	12/09/20	5.2	5.0	3.8	3.5	4.1	3.8	4.9	4.7	4.2	4.0	4.2	4.0	4.0	3.8	3.4	3.1	3.8	3.6	Dry	x
	4592 XVI	412	27/07/17	21/09/20	4.2	4.0	5.3	5.1	6.2	6.0	5.2	5.0	5.9	5.7	6.2	6.0	3.9	3.7	4.2	4.0	4.0	3.7	2.0	1.8
	2383 XVI	453	27/10/17	26/10/20	4.3	4.1	5.3	5.1	5.2	5.0	5.0	4.8	2.3	2.0	2.2	2.0	2.0	1.8	Dry	x	x	x	x	x
	4889 XVI	376	22/11/16	22/11/20	5.9	5.7	5.9	5.7	5.0	5.2	5.3	5.0	5.0	5.2	4.3	4.0	2.8	2.6	2.0	0.0	3.0	2.8	Dry	x
	M-51 XVI	422	18/08/17	08/01/21	4.4	4.2	4.8	4.6	6.2	6.0	5.8	5.4	5.2	5.0	5.1	4.8	3.5	3.1	3.6	3.4	3.5	3.0	3.0	2.5
	2383 XVI	450	12/10/17	11/03/21	4.8	4.6	5.8	5.6	5.8	5.6	5.3	5.1	5.2	5.0	5.2	5.0	4.5	4.0	4.0	3.5	2.0	1.5	Dry	x
	2607 XVII	528	25/09/18	15/03/21	4.2	4.0	4.4	4.1	3.8	3.6	5.1	4.8	3.5	3.3	3.4	3.2	3.5	3.0	3.0	2.5	2.5	2.0	2.0	1.0
	M-51 XVI	423	23/08/17	27/03/21	6.2	6.0	6.2	6.0	5.4	5.2	5.3	5.1	5.8	5.6	5.0	4.5	5.0	4.5	3.0	2.5	2.5	2.0	2.5	2.0
	2501 XVI	447	30/09/17	06/04/21	4.3	4.1	4.2	4.0	4.3	4.1	3.4	3.2	3.3	3.0	4.5	4.0	3.5	3.0	3.5	3.0	3.5	3.0	2.5	2.0
	2501 XVI	446	08/10/17	13/04/21	4.2	4.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2558 XVII	521	06/09/18	04/05/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2565 XVII	516	10/08/18	21/05/21	5.9	5.7	5.8	5.6	5.8	5.6	3.5	3.0	3.0	2.5	2.5	2.0	2.0	1.5	2.0	1.5	2.0	0.0	Dry	x
	4733 XVII	501	06/07/18	31/05/21	4.2	4.0	4.8	4.6	4.2	4.0	4.5	4.0	4.0	3.5	3.5	3.0	3.0	3.0	3.0	2.5	2.5	2.0	1.5	0.0
	2383 XVI	403	05/06/17	01/06/21	3.8	3.6	4.8	4.6	4.8	4.6	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	2.5	2.0	2.5	2.0	2.5	2.0
	6753 XVI	435	28/09/17	03/06/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1064 XVI	463	18/12/17	23/06/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	M-51 XVI	509	26/07/18	25/06/21	4.2	4.0	5.8	5.4	5.5	4.5	5.0	4.5	4.0	3.5	3.5	3.0	4.0	3.5	3.5	3.0	2.5	2.0		
	4837 XVII	527	11/09/18	26/06/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2501 XVI	443	30/09/17	02/07/21	4.2	4.0	4.6	4.4	5.0	4.5	4.5	4.0	3.5	3.0	4.0	3.5	4.0	3.5	2.5	2.0	2.0	1.5		
	6646 XVI	487	16/05/18	02/07/21	3.8	3.6	3.9	3.7	4.5	4.0	4.5	4.0	3.5	3.0	3.5	3.0	3.5	3.0	2.5	2.0	2.0	1.5		
	2594 XVII	499	02/07/18	03/07/21	5.4	5.2	5.2	5.0	5.5	5.0	5.0	4.5	2.5	2.0	4.0	3.5	4.0	3.5	4.5	4.0	4.0	3.5		
	4733 XVII	522	04/09/18	03/07/21	5.0	4.8	5.6	5.4	6.5	6.0	5.5	5.0	5.5	5.0	5.5	5.0	5.0	4.5	4.5	4.0	2.5	2.0		
	2607 XVII	511	09/08/18	22/07/21	4.3	4.1	4.5	4.0	4.0	3.5	2.5	2.0	2.5	2.0	4.5	4.0	2.5	2.0	2.5	2.0				
	6409 XVI	490	08/05/18	24/07/21	4.3	4.1	5.5	5.5	6.0	5.5	3.5	3.0	4.0	3.5	4.5	4.0	4.0	3.5	3.5	3.0				
	4733 XVII	523	06/09/18	01/08/21	5.5	5.3	6.5	6.5	5.5	5.0	6.0	5.5	5.0	5.0	5.5	5.0	5.5	5.0	3.5	3.0				
	4889 XVI	462	04/12/17	03/08/21	4.2	4.0	5.5	5.0	4.5	4.0	4.5	4.0	5.0	4.5	5.0	4.5	5.0	4.5	3.0	2.5				
	6409 XVI	492	18/05/18	04/08/21	4.7	4.5	7.0	6.5	6.5	6.0	4.0	4.0	5.5	5.0	5.5	5.0	4.0	3.5	Dry	x	x	x	x	X
	4715 XVII	518	26/08/18	10/08/21	4.3	4.1	5.0	4.5	4.5	4.0	5.5	5.0	4.0	4.5	4.5	4.0	4.0	3.5	2.5	2.0				
	2467 XVI	455	26/10/17	18/08/21	4.2	4.0	5.0	4.5	5.0	4.5	4.0	3.5	5.5	5.0	5.5	5.0	4.0	3.5	3.5	3.0				
	2594 XVII	497	20/06/18	23/08/21	4.5	4.0	6.0	5.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	3.5	Dry	x	x	x	x	x	x	x

	1148 XVII	555	23/01/19	24/08/21	5.0	4.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2565 XVII	495	30/05/18	03/09/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2558 XVII	514	05/08/18	04/09/21	3.5	3.0	3.5	3.0	3.5	3.0	3.5	3.0	3.0	2.0	3.5	3.0	3.5	3.0						
	6379 XVI	465	28/12/17	06/09/21	5.5	5.0	5.5	5.0	6.5	6.0	6.0	5.5	5.5	5.0	5.0	4.5	5.0	4.5						
	1148 XVII	559	11/03/19	08/09/21	4.5	4.0	6.0	5.5	6.5	6.0	6.5	6.0	6.5	6.0	6.0	5.5	6.0	5.5						
	4592 XVI	493	20/05/18	20/09/21	4.5	4.0	5.5	5.0	6.0	5.5	6.5	6.0	5.5	5.0	5.5	5.0	4.5	4.0						
	M-51 XVI	536	06/10/18	22/09/21	5.5	5.0	6.5	6.0	6.5	6.0	6.0	5.5	6.0	5.5	5.0	4.5								
	2594 XVII	538	22/10/18	17/10/21	4.5	4.0	5.5	5.0	5.5	5.0	5.0	4.5	5.0	4.5	6.0	5.0								
	4715 XVII	554	06/12/18	14/11/21	3.5	3.0	5.5	5.0	5.5	5.0	5.0	5.0	5.0	5.0										
	Dara XVII	541	29/10/18	23/11/21	5.0	4.5	5.0	5.0	5.0	4.5	5.0	4.5												
	6409 XVI	491	12/05/18	28/11/21	5.5	5.0	6.0	5.5	6.0	5.5	5.5	5.0												
	4715 XVII	552	03/01/19	30/12/21	4.5	4.0	4.0	3.5	5.0	4.5														
Bado Patti																								
	2417 XV	231	26/09/16	28/08/20	4.5	4.1	4.7	4.2	6.1	5.8	5.5	5.0	4.9	4.5	4.5	4.0	3.8	3.2	3.1	2.5	2.5	2.0	2.5	1.5
	2467 XVI	280	06/09/17	09/11/20	5.1	4.6	4.8	4.2	4.6	4.4	4.6	4.0	4.7	4.5	3.5	3.0	3.5	3.0	3.5	3.0	3.0	2.0	2.5	2.0
	2417 XV	211	02/06/16	18/11/20	4.5	4.0	5.3	4.8	4.7	4.2	5.1	4.7	5.1	4.7	4.4	4.0	4.5	4.0	4.0	3.5	4.0	3.5	4.0	3.5
	6405 XV	146	28/09/16	14/12/20	5.1	4.5	5.2	4.8	5.2	4.8	5.1	5.0	4.5	4.0	4.0	4.0	4.0	3.5	4.5	4.0	4.0	4.0	3.0	2.5
	4328 XV	233	08/11/16	07/01/21	4.9	4.5	4.5	4.0	4.8	4.4	4.6	4.4	4.5	4.0	4.0	3.5	4.0	3.5	3.5	3.0	3.5	3.0	2.5	2.0
	6007 XV	216	04/07/16	10/02/21	4.6	4.1	4.9	4.4	5.2	4.7	5.5	5.0	5.5	5.0	5.0	4.5	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0
	6379 XVI	309	16/04/18	30/07/21	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	4733 XVII	336	26/09/18	03/08/21	5.0	4.5	5.0	4.5	5.0	4.5	4.5	4.0	4.0	3.0	4.0	3.0	3.0	2.5	3.0	3.5				
	M-53 XVII	363	03/04/19	21/08/21	4.5	4.0	4.0	3.5	5.0	4.5	4.0	3.5	3.5	3.0	3.5	3.0	3.0	2.5						
	4592 XVI	319	04/07/18	27/08/21	5.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	3.5	3.5	3.0	3.5	3.0						
	2558 XVII	349	30/11/18	07/09/21	4.5	4.0	5.0	4.5	5.0	4.5	4.5	4.0	5.5	5.0	5.0	4.5	4.5	4.0						
	6379 XVI	311	30/04/18	03/10/21	4.5	4.0	5.5	5.0	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5								
	1027 XVI	307	17/03/18	14/10/21	4.0	3.5	4.5	4.0	5.0	4.5	5.0	4.5	4.5	4.0	4.5	4.0								
	2594 XVII	340	21/10/18	16/10/21	4.5	4.0	5.0	4.5	5.5	5.0	5.5	5.0	5.5	5.0	5.0	4.5								
	1053 XVI	318	30/06/18	21/10/21	5.5	5.0	5.0	4.5	5.0	4.5	5.0	4.5	4.5	4.0										
	M-29 XVI	256	08/02/17	27/03/22																				
Bugana																								
	4324 XV	145	01/09/16	27/07/20	4.7	4.3	5.2	4.8	5.4	5.0	5.5	5.1	5.1	4.7	3.4	3.0	2.5	2.1	2.3	2.0	2.0	0.0	1.5	0.0
	2417 XV	143	09/08/16	23/08/20	4.3	2.9	5.2	4.8	5.6	5.2	5.3	5.0	4.6	4.0	4.1	3.7	3.4	3.0	2.5	2.0	2.3	2.0	2.0	1.5
	2467 XVI	168	30/10/17	22/10/20	4.4	4.0	4.9	4.4	5.3	4.8	4.6	4.2	4.5	4.1	3.6	3.2	3.5	3.2	4.0	3.0	3.5	3.0	Sold	x
	4592 XVI	170	07/11/17	02/01/21	4.2	3.8	5.3	5.0	5.6	5.2	5.4	5.0	4.5	4.0	Dry	x	x	x	x	x	x	x	x	x
	6405 XV	142	30/07/16	31/01/21	4.2	3.8	5.3	5.0	5.5	5.0	4.7	4.3	2.0	2.0	4.0	1.5	2.5	2.5	2.0	2.0	2.0	2.0	3.0	0.0
	4592 XVI	154	12/05/17	27/06/21	4.	3.5	4.0	3.0	2.5	2.5	3.0	3.0	2.5	2.5	4.0	0.0	3.0	0.0	2.0	0.0	Sold	x	x	x
	2501 XVI	163	29/09/17	09/07/21	4.2	4.0	5.0	5.5	4.0	3.0	4.0	3.5	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0		
	2501 XVI	164	24/09/17	27/07/21	2.5	2.5	2.0	2.0	3.5	3.5	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0				
	4592 XVI	173	21/03/18	19/08/21	5.0	5.5	5.5	5.5	6.0	6.0	5.5	5.0	5.0	5.0	5.0	4.0	4.0	4.0	3.0	3.0				
	2607 XVII	187	20/09/18	30/08/21	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.0						
	4837 XVII	199	29/11/18	01/10/21	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0								
	Dara XVII	218	19/06/19	21/11/21	6.0	5.0	6.0	5.0	5.0	5.0	4.0	4.0												
	4687 XVII	204	18/01/19	13/02/22	4.0	4.0	4.0	4.0																

F 15. Set-wise AI, Conception and daughters retained

Set No.	Duration	Bulls (n)	AI	Preg	Calving		Progenies				
					Total	F	Calved (n)	Av. AFC (month)	Complete Recording	Av. Milk Yield (kg/day)	Available (n)
VIII	Jan 2004 to July 2005	17	1679	737	440	199	23	40.84	18	6.89	-
IX	Aug 2005 to Jan 2007	14	3418	1744	1222	556	89	44.45	58	7.88	-
X	Jan 2007 to Oct 2008	13	3400	1795	1252	600	100	42.23	78	7.49	-
XI	Oct 2008 to March 2010	14	4058	2066	1825	892	128	42.39	88	7.10	-
XII	March 2010 to Sept 2011	12	4569	2356	1119	538	142	42.13	101	7.43	-
XIII	Sept 2011 to March 2013	9	6251	3197	1989	937	272	42.75	203	7.77	-
XIV	March 2013 to July 2014	10	4693	2271	1325	638	162	41.63	132	8.00	-
XV	July 2014 to Dec 2015	15	6955	3762	2732	1286	299	40.42	229	8.08	-
XVI	Jan 2016 to July 2017	15	6116	3218	2485	1251	262#	40.29	212	8.14	25
XVII	July 2017 to March 2019	15	6053	3382	2636	1254	99#	35.65	37	8.29	376
XVIII	Jan 2019 to July 2020	15	5287	2839	2192	1000	-	-	-	-	468
XIX	July 2020 to Dec 2021	12	5568	3026@	1310*	691*	-	-	-	-	376
XX	Jan 2022 to July 2023	18	515 Jan 22 to March 22	-	-	-	-	-	-	-	-
# Calving and milk recording of progenies of XVth and XVIth set is in progress *Set XVIII - Calving recorded till March 2021 @ Set XIX - Preg reported till March 2021 (AI of Dec 2020)											1245

F 16. Performance of FPT Programme on Farmer's Buffaloes

Duration	AI	Pregnancies	CR%	Progenies		Progenies				
				Total	Females	Calved (n)	Av. AFC (months)	Complete Recording	Av. Milk Yield (kg/day)	Daughters Available for Future Recording
2001-02	139	25	17.98	17	6	-	-	-	-	-
2002-03	540	236	43.70	14	3	-	-	-	-	-
2003-04	1001	356	35.56	147	73	-	-	-	-	-
2004-05	1298	566	43.61	243	133	-	-	-	-	-
2005-06	1999	1009	50.48	382	179	1	32.28	1	4.61	-
2006-07	2102	1139	54.19	756	352	6	40.36	5	6.97	-
2007-08	2132	1104	51.78	772	311	7	43.31	7	8.04	-
2008-09	2176	1086	49.91	716	358	30	42.70	27	6.26	-
2009-10	2803	1450	51.73	971	481	28	39.69	14	7.33	-
2010-11	3433	1743	50.77	1279	634	48	41.94	36	7.93	-
2011-12	3308	1756	53.08	732	348	62	43.71	47	8.10	-
2012-13	4204	2104	50.05	1159	574	71	41.67	54	7.26	-
2013-14	3962	1903	48.03	1230	552	72	41.39	50	7.26	-
2014-15	4129	2218	53.72	1093	528	93	42.11	70	7.00	-

Cont..F 16

Duration	AI	Pregnancies	CR%	Progenies		Progenies				
				Total	Females	Calved (n)	Av. AFC (months)	Complete Recording	Av. Milk Yield (kg/day)	Daughters Available for Future Recording
2015-16	4434	2326	52.46	1718	818	119	41.52	78	7.50	-
2016-17	3807	2063	54.19	1661	797	170	42.04	139	7.77	-
2017-18	4093	2248	54.92	1593	799	160	43.03	126	7.86	12
2018-19	3977	2214	55.67	1710	830	181	40.02	144	8.21	115
2019-20	3957	2140	54.08	1754	801	172	40.44	123	8.01	328
2020-21	3480	1901	54.63	1430	663	169	40.53	139	7.96	371
2021-22	3167	1815	57.31	1434	746	217	40.66	172	7.94	419
Overall	**60141**	**31402**	**52.21**	**20811**	**9986**	**1606**	**41.34**	**1232**	**7.80**	**1245**

Project Co-ordinator's observations on field unit performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC	
Total	ICAR Share		ICAR Share	Balance
18.00	18.00	18.00	18.00	0.00

- During the period from April 2021to March 2022, 3167 artificial inseminations were performed using test bulls of 19th and 20th set. The use 20th set was initiated from January 2022.
- The conception rate in the field was worked out to be 56.91 percent.
- In this period 1404 pregnancies were confirmed and 1434 calving (688 males, 746 females) were recorded. In addition, 217 progenies, 04 of 15th, 116 of 16th and 97 of 17th set were also calved and monthly test day milk yield were/ being recorded.
- The average age at first calving for these 217 daughters was 40.66 months.
- During the period 336 daughters were recorded, out of which 220 daughters completed the lactation, 38 daughters sold before the lactation was completed and recording of 71 daughters are in progress.
- As on 31st March 2022, 1246 female progenies of 16th to 19th set of different age are standing at various field unit centres for future recordings.

Recommendations:

- No. of AI in field should be increased to meet out the target of 4000 inseminations.
- To create awareness and active participation of farmers in FPT program.

FIELD UNIT: GADVASU, LUDHIANA

(i) Nodal agency : Coordinating unit CIRB HISAR

(ii) Participating Units : 1. CIRB, Hisar
2. GADVASU, Ludhiana
3. NDRI, Karnal

Date of start : November, 2001

OBJECTIVES:

To strengthen the ongoing sire evaluation programme of associated herd progeny testing by including field performance recording of the daughters of test bulls.

Financial Statement :

Statement showing budget sanctioned, amount spent for the period 1st April, 2021 to March, 2022.

Financial Statement for the year 2021-22 (Rs in Lakhs)

	Budget Sanctioned (Rs.)	**Amount Spent (Rs.)**
Pay & allowances	24,00,000	20,07,103
T.A.		
Contingencies		
Recurring	24,00,000	24,00,000
Equipments	2,00,000	2,00,000
Total	**50,00,000**	**46,07,103**

Staff and Infrastructure Buildup during the year :

Staff in position:
Principal Investigator : Dr. Puneet Malhotra (Asstt. Professor)
Co- Principal Investigator : Dr. Simarjeet Kaur (Head of Animal Genetics and Breeding)

Sr. No.	Name & Designation of the person employed on the sanctioned post with pay scale	Pay scale	Total time spent for the project	Remarks
1.	Milk Recording Supervisor	Rs. 10300-34800+3800	Full Time	Post withdrawn wef 31.03.2022
2.	Milk Recorder	Rs. 10300-34800+3200	Full Time	

F 1. Herd Strength of Registered females at Different Field Centers during 2021-22

Centers/ Village	OB	Addition			Deduction		Closing Birth
		New Reg.	Birth	Purchase/ Traced	Sold/	Death/ AB	
Aitiana	225	84		0	1	0	308
Barsal	171	37		0	0	0	208
Batha dhua	378	29		0	21	1	385
Bharowal kalan 1 (bharowal khurd)	64	18		0	0	0	82
Bhundri (gorahoor), bhundri dairy	444	49		0	15	4	474
Boparai kalan	9	23		0	0	0	32
Chimna	432	79		0	27	20	464
Chowkiman	240	41		0	8	0	273
Dhat	7	0		0	0	0	7
Bharowal kalan 2 (gkb)	191	89		0	4	3	273
Gurusar kaunke	137	39		0	5	8	163
Gidharpindi	39	51		0	0	0	90
Hans kalan	67	78		0	0	0	145
Jandi	72	14		0	0	0	86
Jassowal	594	107		0	48	2	651
Kailpur	347	19		0	9	0	357
Kehra bet	242	102		0	2	1	341
Khudai chak	265	28		0	10	0	283
Mandiani	16	1		0	0	0	17
Ponna	138	2		0	6	5	129
Raqba	39	3		0	0	0	42
Sadarpura	196	13		0	3	1	205
Sawaddi kalan (majri)	43	7		0	8	1	41
Sawaddi khurd	296	33		0	6	0	323
Sidhwana bet/leelan	18	37		0	0	0	55
Talwandi khurd	249	53		0	17	0	285
Walipur kalan	290	29		0	26	0	293
Walipur khurd	250	55		0	16	**2**	287
Chhajjawal	0	25			0	0	25
Total	**5459**	**1145**			**232**	**48**	**6324**

F2. Status of breedable females at different field unit centers during 2021-22

Centers/ Village	Heifers >3 years		Buffalo (NP)		Buffalo Pregnant	
	Total	Pregnant	In milk	Dry	In milk	Dry
Aitiana	99	36	22	18	10	12
Barsal	118	30	20	17	8	7
Bhatha Dhua	117	31	18	17	16	15
Bharowal Kalan 1 & 2 GKB	162	34	13	10	6	10
Bhundri 1 & 2 Gorahoor	160	90	28	30	17	8
Boparai Kalan	115	35	10	6	3	3
Chimna	145	174	21	20	9	7
Dhatt	130	18	4	2	1	2
Walipur Kalan	280	66	25	19	7	6
Gurusar	190	38	15	12	15	6
Jandi	270	40	15	10	6	7
Kailpur	140	120	8	12	10	9
Kehra Bet	90	65	30	40	8	7
Khudai Chak	95	70	10	12	12	4
Pandori	35	25	2	1	1	1
Raqba	85	40	3	2	2	1
Sawaddi Khurd	175	75	35	30	10	10
Walipur Khurd 1 & 2	250	90	22	20	15	7
Chowkiman	210	50	15	14	10	6
Sadarpura	210	60	20	12	13	9

Jasowal	310	150	40	40	35	11
Mandiani	60	08	4	1	4	2
Talwandi Khurd	160	90	30	25	12	8
Sidhwan bet	180	60	26	19	6	6
Total	**3786**	**1495**	**436**	**389**	**236**	**164**

F3. Monthly A.I.'s at different field unit centers during the period from 4/2021 to 3/2022

Centre/ month	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Grand Total
Aitiana	15	15	20	25	55	45	50	38	40	30	25	40	398
Barsal	7	8	8	10	15	15	13	13	18	11	10	5	133
Bharowal Khurd	25	20	20	30	25	25	35	40	55	20	20	30	345
Bhatha Dhua	10	5	10	5	10	7	10	10	10	10	10	10	107
Bhundri Dairy	5	5	5	5	2	4	5	5	10	5	5	5	61
Boparai Kalan	12	20	10	16	15	17	10	10	28	5	10	15	168
Chhajjawal	0	10	15	13	10	30	25	32	26	21	25	18	225
Chimna	31	25	18	20	30	33	21	30	50	35	35	55	383
Chowkiman	10	5	8	15	24	15	25	20	17	16	15	10	180
Dhat	3	3	5	5	3	3	5	5	3	5	5	5	50
G.K.B.	0	0	0	0	0	25	0	0	0	0	0	0	25
Giderpindi	16	10	18	10	20	30	25	40	70	40	25	30	334
G K B	20	16	18	18	20		15	25	15	20	20	25	212
Gorahoor	25	10	15	20	20	21	15	10	20		5		161
Gurusar	15	10	15	10	20	10	30	20	35	30	30	25	250
Hans Kalan	12	21	28	11	20	28	35	25	37	10	25	40	292
Jainpur Dairy	0	0	0	0	25	30	35	35	20	20	30	40	235
Jandi	15	30	38	12	40	35	35	60	20	45	40	40	410
Jassowal	54	56	60	65	85	95	90	130	110	50	70	55	920
Kailpur	30	36	30	35	35	30	20	20	25	20	0	0	281
Khera Bet	30	45	36	25	40	42	35	40	40	30	30	40	433
Khudai Chak	15	20	14	13	15	15	25	20	15	0	5		157
Leelan/Sidhwan Bet	25	17	20	22	15	20	30	45	50	30	20	30	324
Ponna	20	15	14	20	20	16	15	20	25	20	15	15	215
Raqba	3	5	3	3	3	5	5	5	5	5	5	5	52
Sadarpura	22	20	15	12	15	20	25	30	30	15	20	15	239
Sawaddi Kalan/majri	0	10	0	0	0	0	0	0	0	0	0	0	10
Sawaddi Khurd	16	19	15	15	7	20	20	20	20	15	20	30	217
Sibian	10	0	10	10	15	19	25	20	30	10	20	15	184
Talwandi Khurd	30	25	40	30	40	45	55	45	65	45	45	40	505
Thakanbad	0	0	0	0	0		44	60	50	40	50	33	277
Walipur Kalan	35	35	30	25	40	40	40	40	50	35	45	50	465
Walipur Khurd	20	15	25	15	27	24	40	30	30	25	22	22	295
Grand total	**531**	**531**	**563**	**515**	**711**	**764**	**858**	**943**	**1019**	**663**	**702**	**743**	**8543**

F4. Bull-wise A.I's. at different field unit centers during the period from4/2021 to 3/2022

Bull No.	Set no.	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Grand Total
1315	19				161	520	159		45	55				940
1454	20												116	116
2674	19			15	125	99				285				524
2737	19									70				70
2759	19	77	308	510	211									1106
2793	20											125	135	260
3004	20										40			40
5181	19	40	61	23	18				65	15				222
5232	19	83	63	15		22								183
5246	19	80	10											90
5310	19	65							33	178				276
5320	19	40	45					290	360	50				785
5333	19	52					189	403	102	28				774
5374	19	94	44					90	185	75				488
5427	20										126	230	93	449
5481	20												165	165

5588	20												87	87
7584	20										170	232	107	509
7604	19					70	416	75	153	263				977
7649	20										327	115	40	482
Grand Total		**531**	**531**	**563**	**515**	**711**	**764**	**858**	**943**	**1019**	**663**	**702**	**743**	**8543**

F5: Month –wise Conception at different field unit centers for period from 12/2020 to 11/2021

Centre	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Grand Total
Aitiana	17	14	9	10	8	8	10	12	27	23	25	19	182
Barsal	10	7	5	5	4	4	4	5	8	8	7	7	74
Bharowal Khurd	18	16	18	17	12	10	9	15	11	13	17	20	176
Bhatha Dhua	7	7	3	4	5	2	5	2	4	3	3	4	49
Bhundri Dairy	2	2	1	1	2	2	2	2	1	2	3	2	22
Boparai Kalan	13	11	11	9	6	10	5	8	7	9	6	5	100
Chhajjawal	0	0	0	0	0	5	8	7	5	15	13	16	69
Chimna	18	7	9	11	16	12	8	9	15	13	9	13	140
Chowkiman	12	7	6	9	6	3	4	8	12	8	13	10	98
Dhat	2	2	2	3	2	2	2	3	2	2	3	3	28
G.K.B	0	0	0	0	0	0	0	0	0	11	0	0	11
Giderpindi	10	10	13	10	9	6	9	5	9	15	11	19	126
Gkb	14	7	11	10	9	7	8	7	9	0	7	11	100
Gorahoor	17	21	18	14	12	5	7	8	9	11	7	6	135
Gurusar	9	3	4	10	7	4	7	4	8	4	13	8	81
Hans Kalan	8	12	10	13	7	10	14	6	11	15	18	13	137
Jainpur Dairy	0	0	0	0	0	0	0	00	12	15	16	17	60
Jandi	23	26	17	25	8	14	17	7	15	16	16	28	212
Jassowal	30	28	37	35	26	25	30	33	40	48	45	55	432
Kailpur	16	15	15	19	14	18	14	12	16	14	7	7	167
Khera Bet	14	16	17	24	14	20	17	14	18	18	15	14	201
Khudai Chak	10	4	5	7	7	9	6	6	6	6	11	9	86
Leelan/Sidhwan Bet	7	8	15	11	12	9	9	11	7	10	14	22	135
Ponna	10	4	9	7	10	7	6	8	9	7	7	8	92
Raqba	3	2	3	3	2	3	2	2	2	3	3	3	31
Sadarpura	11	8	12	12	10	10	9	6	7	10	11	15	121
Sawaddi Kalan/Majri	0	0	0	0	0	5	0	0	0	0	0	0	5
Sawaddi Khurd	8	8	9	8	8	9	7	7	4	10	10	10	98
Sibian	9	10	9	7	5		5	6	8	9	13	9	90
Talwandi Khurd	15	14	13	12	14	11	20	14	15	22	20	20	190
Thakanbad	0	0	0	0	0	0	0	0	0	0	22	29	51
Walipur Kalan	11	17	11	17	17	17	14	12	18	20	20	20	194
Walipur Khurd	10	12	9	11	7	7	10	7	10	11	17	11	122
Grand Total	**334**	**298**	**301**	**324**	**259**	**254**	**268**	**246**	**325**	**371**	**402**	**433**	**3815**

F6: Month –wise Calving at different field unit centers during the period from 4/2021 to 3/2022

Month	Apr-21		May-21		Jun-21		Jul-21		Aug-21		Sep-21		Oct-21		Nov-21		Dec-21		Jan-22		Feb-22		Mar-22		Total	
CENTRE	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**
Aitiana	8	7	5	6	6	6	8	6	9	9	8	7	5	5	9	8	6	5	4	4	5	4	4	4	77	71
Barsal	3	2	3	3	3	2	4	4	3	2	6	5	2	2	6	4	3	3	3	2	3	2	2	2	41	33
Bharowal Khurd	6	5	4	5	4	5	2	1	5	5	7	6	7	10	7	8	6	5	6	8	5	7	5	4	64	69
Bhatha Dhua	2	3	3	3	2	2	2	2	2	2	3	2	2	2	3	4	3	4	2	1	2	2	2	3	28	30
Bhundri Dairy	1	2	1	2	1	1		1	1	2	1	3	1	2	1	1	1	1	1	0	0	1	1	1	10	17
Boparai Kalan	1	1	2	2	2	2	2	1	3	5	4	4	3	3	7	6	4	4	5	5	4	4	4	2	41	39
Chimna	10	14	8	12	8	12	7	6	5	9	7	10	7	10	7	8	3	3	4	4	4	5	6	9	76	102
Chowkiman	3	3	5	4	3	3	3	2	5	5	6	6	8	8	7	5	3	3	3	3	5	4	3	3	54	49
Dhat	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	12
Giderpindi	5	5	5	3	4	4	4	4	3	2	6	5	4	4	4	4	4	5	5	6	3	5	4	3	51	50
Gkb	3	5	1	2	3	4	5	7	5	6	4	7	4	5	4	8	2	4	4	6	3	5	3	5	41	64
Gorahoor	3	4	4	3	4	5	7	7	5	4	7	5	5	5	6	7	7	10	6	8	5	6	4	5	63	69
Gurusar	4	5	4	8	6	9	7	2	5	8	3	5	3	5	4	4	1	2	2	2	3	5	3	4	45	59
Hans Kalan	5	5	2	1	4	4	7	8	9	8	5	4	5	5	5	3	5	5	4	4	6	6	4	3	61	56
Jandi	5	5	7	7	6	6	7	7	8	8	11	13	8	11	9	10	9	12	6	7	7	11	4	3	87	100
Jassowal	14	14	13	14	15	15	16	18	15	20	15	17	9	9	15	13	12	12	13	13	16	15	13	13	166	173
Kailpur	13	6	8	12	7	8	8	12	7	8	8	9	7	11	7	9	5	8	5	8	7	10	5	7	87	108
Khera Bet	6	8	7	7	7	8	8	8	10	10	10	11	11	8	7	7	8	7	7	8	10	12	6	7	97	101
Khudai Chak	4	5	5	9	3	5	3	5	3	5	4	7	1	1	4	5	2	2	2	2	3	4	3	4	37	54
Leelan/Sidhwan Bet	4	5	5	5	4	5	3	2	3	3	6	6	6	7	3	2	3	3	5	7	4	5	5	3	51	53
Ponna	3	5	2	2	2	2	3	4	4	5	2	3	2	3	4	5	2	2	3	5	3	4	3	6	33	46
Raqba	1	1	2	2	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	17	16
Sadarpura	3	2	3	3	4	3	3	3	4	3	4	3	4	4	5	4	3	4	4	5	4	5	5	3	46	42
Sawaddi Kalan/Majri	3	4	3	2	4	5	2	3	2	2	4	3													18	19
Sawaddi Khurd	2	3	4	5	3	3	7	6	4	4	3	3	4	4	3	3	3	3	4	2	3	3	4	3	44	42
Sibian													3	3	3	4	4	4	4	3	3	2	2	2	19	18
Talwandi Khurd	7	9	5	7	4	4	5	5	6	8	7	8	7	9	7	8	7	6	6	7	5	6	6	8	72	85
Walipur Kalan	7	11	6	8	4	5	4	4	6	9	7	8	7	10	5	6	7	9	5	6	6	9	8	9	72	94
Walipur Khurd	5	7	4	7	4	5	4	5	8	10	4	7	4	6	5	5	4	6	4	5	5	6	3	4	54	73
Grand Total	**132**	**147**	**122**	**145**	**119**	**135**	**133**	**135**	**144**	**165**	**155**	**170**	**132**	**155**	**150**	**153**	**119**	**134**	**119**	**133**	**126**	**150**	**114**	**122**	**1565**	**1744**

F= Female M = Male

F7: Bull–wise Conception at different field unit centers during the period from 4/2021 to 3/2022

Bull No.	SET	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Total
1315	19								79	236	79		20	414
2674	19		11					8	61	46				126
2737	19	3												3
2759	19	19	19	5	41	39	147	243	99					612
5181	19	130	40	9		19	29	10	7				29	273
5232	19	41	21			38	31	7		10				148
5246	19	141	90	5	25	38	5							304
5310	19		93	159	53	32							15	352
5320	19			35	88	20	21					141	160	465
5333	19			29	77	25					91	185	49	456
5374	19		24	59	40	48	21					44	93	329
7604	19									33	201	32	67	333
Grand Total		**334**	**298**	**301**	**324**	**259**	**254**	**268**	**246**	**325**	**371**	**402**	**433**	**3815**

F8 Bull–wise calving at different field unit centers during the period from 4/2021 to 3/2022

Month		Apr-21		May-21		Jun-21		Jul-21		Aug-21		Sep-21		Oct-21		Nov-21		Dec-21		Jan-22		Feb-22		Mar-22		Total	
Bull No.	Set No.	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
1208	18			47	58	48	52																			95	110
1219	18	63	72	16	14																					79	86
2645	18	4	6			21	23	11	12																	36	41
2674	19					23	25	72	76	33	35	8	8					6	5							142	149
2676	18					27	35																			27	35
2737	19							50	47	89	105	55	59	8	9	1	1									203	221
2759	19									11	15	18	20	16	17	11	8	8	10	2	2	14	17	17	21	97	110
5147	18	63	66	59	73																					122	139
5181	19											23	26	21	23	57	60	14	18	4	3			7	11	126	141
5232	19											40	48	61	73	17	18	8	10					18	17	144	166
5246	19									11	10	11	9	26	33	64	66	36	40	2	3	10	14	17	17	177	192
5310	19																	37	41	60	74	17	24	14	16	128	155
5320	19																			13	14	36	41	9	10	58	65
5333	19																			11	11	31	35	10	9	52	55
5374	19																	10	10	27	26	18	19	22	21	77	76
7147	18	2	3																							2	3
Grand Total		**132**	**147**	**122**	**145**	**119**	**135**	**133**	**135**	**144**	**165**	**155**	**170**	**132**	**155**	**150**	**153**	**119**	**134**	**119**	**133**	**126**	**150**	**114**	**122**	**1565**	**1744**

F = Female M = Male

F9. Live female progeny at field unit centers from (0 to ≤ 6 mo.) as on 3/2022.

290 live female progenies (0 to ≤ 6 month.) available in the field unit centres.

F10. Live female progeny at different field unit centers from (>6 to ≤ 12mo.) as on 3/2022.

582 live female progenies (>6 to ≤ 12month) available in the field unit centres.

F11 : Live female progeny at different field unit centers (>1 to ≤3 years) as on 3/2022

1871 live female progeny (>1 to ≤3 years) available in the field unit centres.

F12 : Live female progeny at different field unit centers (>3 years) as on 3/2022

4216 live female progeny (>3 years)available in the field unit centres.

F13 : Daughters calved at different field unit centers during 2021-2022

365 daughters calved during the report period at different field unit centres.

F 14 Daughters recorded at different field units during 2021-2022

Test day milk recording of 381 daughters completed at different field unit during the period and 305 days average milk yield was 2535.56 kg

F15. Bull-wise A.I., Conception, Calving and Daughter's retained till completion of milk recording

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
1667	6	159	56	18	7	0	0	2	2	2
1706	6	421	141	130	61	0	0	4	4	4
1713	6	423	208	121	54	0	0	0	0	0
1717	6	497	168	145	65	0	0	4	4	4
1933	6	27	11	5	3	0	0	0	0	0
1944	6	25	11	5	2	0	0	0	0	0
4506	6	210	76	49	21	0	0	1	1	1
4523	6	117	82	65	30	0	0	4	4	4
4619	6	99	52	26	11	0	0	0	0	0
4637	6	124	48	30	12	0	0	3	3	3
4640	6	221	90	75	34	0	0	6	6	6
1727	7	301	109	88	42	0	0	5	5	5
1746	7	594	219	132	67	0	0	9	9	9
1749	7	314	110	84	39	0	0	0	0	0
1796	7	200	80	45	17	0	0	1	1	1
2121	7	85	34	13	6	0	0	0	0	0
2133	7	103	32	26	12	0	0	3	3	3
2184	7	36	28	27	13	0	0	0	0	0
2331	7	61	19	13	7	0	0	2	2	2
2363	7	61	20	8	3	0	0	0	0	0
1492	8	134	43	40	18	0	0	1	1	1
1509	8	101	30	26	13	0	0	1	1	1
1867	8	604	202	173	78	0	0	9	9	9
1868	8	520	199	169	85	0	0	8	8	8
1875	8	980	366	236	105	0	0	7	7	7
1893	8	342	110	88	41	0	0	1	1	1
2250	8	84	33	27	14	0	0	0	0	0
2308	8	136	48	27	12	0	0	3	3	3
2396	8	60	22	16	6	0	0	0	0	0
2422	8	63	30	22	10	0	0	0	0	0
2479	8	81	38	27	13	0	0	1	1	1
2522	8	77	35	28	14	0	0	2	2	2
4813	8	21	12	5	2	0	0	1	1	1
4865	8	103	51	37	20	0	0	0	0	0

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
5049	8	88	34	23	10	0	0	0	0	0
5054	8	73	25	10	6	0	0	0	0	0
5083	8	75	40	28	14	0	0	0	0	0
1575	9	76	29	19	9	0	0	1	1	1
1903	9	785	299	219	97	0	0	14	14	14
1913	9	571	224	146	66	0	0	7	7	7
1940	9	1107	427	272	121	0	0	18	18	18
1964	9	1014	378	267	118	0	0	14	14	14
1994	9	856	301	209	92	0	0	15	15	15
2582	9	165	72	48	26	0	0	6	6	6
2592	9	146	58	35	13	0	0	2	2	2
2720	9	105	39	17	6	0	0	0	0	0
2910	9	54	22	12	6	0	0	0	0	0
5112	9	95	54	40	18	0	0	5	5	5
5197	9	33	13	10	4	0	0	1	1	1
5218	9	76	27	19	9	0	0	0	0	0
5258	9	36	13	6	3	0	0	0	0	0
5312	9	37	14	12	6	0	0	0	0	0
1693	10	52	19	15	6	0	0	0	0	0
2045	10	1431	555	425	187	0	0	43	43	43
2062	10	1190	481	354	162	0	0	33	33	33
2073	10	1022	388	279	129	0	0	23	23	23
2074	10	945	347	253	111	0	0	16	16	16
2083	10	497	195	145	66	0	0	15	15	15
2084	10	10	3	2	1	0	0	0	0	0
2990	10	50	20	13	5	0	0	1	1	1
3103	10	101	47	28	12	0	0	1	1	1
3631	10	70	28	19	8	0	0	1	1	1
5396	10	28	11	9	3	0	0	0	0	0
2133	11	3263	1202	759	379	0	0	59	59	59
2148	11	2905	1068	706	338	0	0	77	77	77
2154	11	2558	975	647	322	0	0	66	66	66
3226	11	76	32	23	13	0	0	1	1	1
3255	11	220	104	67	32	0	0	8	8	8
3267	11	53	37	11	5	0	0	2	2	2
3591	11	46	17	12	7	0	0	2	2	2
5496	11	45	18	10	5	0	0	0	0	0
5516	11	35	14	10	5	0	0	0	0	0
HAU12	11	217	91	65	33	0	0	3	3	3
ND6	11	23	8	4	2	0	0	1	1	1
ND8	11	37	13	12	6	0	0	0	0	0
2176	12	2980	1159	913	429	0	0	73	73	73
2177	12	2520	956	672	315	0	0	85	85	85
2185	12	2420	893	626	293	0	0	74	74	74
3598	12	104	36	26	13	0	0	3	3	3
HAU183	12	80	29	17	9	0	0	2	2	2
HAU220	12	35	13	9	5	0	0	0	0	0
KHURANA	12	2	1	0	0	0	0	0	0	0
REDHU11	12	71	23	17	9	0	0	1	1	1
2234	13	5060	2129	1651	749	0	0	199	182	173
2269	13	3349	1445	1158	536	0	0	102	95	92
2304	13	6134	2631	2115	985	0	0	258	236	229

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
3964	13	131	52	45	25	0	0	11	10	10
4059	13	214	85	69	32	0	0	13	11	10
5943	13	31	13	10	5	0	0	1	1	1
2357	14	1640	701	578	262	0	0	76	62	59
2369	14	5454	2323	2001	973	0	0	179	145	145
4093	14	253	109	91	42	0	0	20	14	13
4100	14	110	48	45	24	0	0	16	12	11
4196	14	143	60	73	50	0	0	6	6	6
4439	14	214	87	76	35	0	0	24	21	21
6014	14	146	63	60	31	0	0	19	15	15
6044	14	166	70	68	33	0	0	14	10	9
6136	14	202	89	85	42	0	0	32	24	24
2371	15	854	378	297	137	0	0	98	53	41
2412	15	820	367	304	139	0	0	70	49	38
2417	15	1605	707	592	284	0	0	163	89	76
2429	15	991	430	358	171	0	0	109	44	39
2459	15	917	383	352	158	0	0	54	31	28
4324	15	1121	505	419	193	0	0	67	41	33
4328	15	701	314	265	125	0	0	60	34	35
4354	15	1069	461	369	168	0	0	103	54	45
4363	15	588	257	202	98	0	0	59	37	33
4403	15	624	272	215	97	0	0	55	26	23
4438	15	564	257	211	96	0	0	54	35	33
6007	15	579	247	213	97	0	0	29	11	10
6139	15	407	183	147	71	0	0	40	20	18
6290	15	371	159	129	59	0	0	30	19	18
6405	15	411	180	142	63	0	0	35	22	20
1027	16	425	190	161	74	0	0	26	15	2
1053	16	278	127	108	48	0	0	18	11	0
1064	16	0	0	0	0	0	0	0	0	0
2383	16	1069	471	386	177	0	0	112	50	6
2467	16	856	383	306	146	0	0	71	34	3
2501	16	1161	520	419	199	0	0	130	40	12
4592	16	386	173	136	61	0	0	23	10	5
4623	16	0	0	0	0	0	0	0	0	0
4705	16	1074	476	392	188	0	0	119	35	12
4889	16	888	403	330	157	0	0	84	32	9
6379	16	174	82	66	33	0	0	11	6	0
6409	16	260	117	95	42	0	0	21	7	0
6646	16	341	154	132	63	0	0	39	22	1
6753	16	52	24	18	7	0	0	0	0	0
29M	16	489	222	175	82	0	0	44	15	0
1148	17	674	327	285	128	0	0	43	0	0
2558	17	1308	604	511	237	0	0	146	1	0
2565	17	1192	545	460	215	0	00	110	2	0
2594	17	1335	609	536	259	0	0	166	5	0
2607	17	1291	610	525	252	0	0	172	2	1
4687	17	857	392	328	166	0	0	130	6	0
4715	17	741	336	288	142	0	0	92	2	0
4733	17	454	209	176	86	0	0	52	0	1
4837	17	584	237	197	98	0	0	67	1	0
7010	17	286	132	110	56	0	0	29	7	0
6942	17	381	190	157	76	0	0	44	0	0

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
51M	17	890	411	299	123	0	0	103	11	2
53M	17	362	173	201	119	0	0	33	0	0
B-1-330	17	368	171	151	69	0	0	33	0	0
Sikander	17	207	96	83	41	0	1	24	0	0
Dara	17	147	78	69	33	0	1	16	0	0
4905	18	977	472	427	211	0	47	82	0	0
4928	18	0	0	0	0	0	0	0	0	0
4995	18	803	415	372	188	0	92	0	0	0
5031	18	0	0	0	0	0	0	0	0	0
1150	18	689	331	306	160	0	34	58	0	0
1198	18	0	0	0	0	0	0	0	0	0
1208	18	761	382	318	148	82	23	0	0	0
1209	18	763	389	356	176	0	106	0	0	0
1219	18	952	489	421	210	21	131	0	0	0
2645	18	1540	762	644	305	34	38	81	0	0
2676	18	1416	684	602	284	20	78	70	0	0
2677	18	685	328	293	145	0	40	43	0	0
2689	18	743	370	317	151	2	52	6	0	0
7094	18	582	294	248	115	0	54	16	0	0
7147	18	748	382	334	163	4	58	27	0	0
7227	18	763	392	337	163	2	78	20	0	0
7263	18	563	298	246	110	8	53	0	0	0
5147	18	1051	541	451	208	53	93	0	0	0
1315	19	940	414	0	0	0	0	0	0	0
2674	19	1205	448	291	142	100	0	0	0	0
2737	19	1070	500	424	203	129	0	0	0	0
2759	19	1495	724	207	97	45	0	0	0	0
2767	19	0	0	0	0	0	0	0	0	0
2781	19	0	0	0	0	0	0	0	0	0
5181	19	833	384	267	126	76	0	0	0	0
5232	19	839	410	310	144	70	0	0	0	0
5246	19	885	420	369	177	110	0	0	0	0
5310	19	922	352	283	128	61	0	0	0	0
5320	19	1038	465	123	58	9	0	0	0	0
5333	19	1004	456	107	52	9	0	0	0	0
5374	19	745	329	153	77	36	0	0	0	0
5375	19	0	0	0	0	0	0	0	0	0
7604	19	977	333	0	0	0	0	0	0	0
1454	20	116	0	0	0	0	0	0	0	0
2793	20	260	0	0	0	0	0	0	0	0
3004	20	40	0	0	0	0	0	0	0	0
5481	20	165	0	0	0	0	0	0	0	0
5427	20	449	0	0	0	0	0	0	0	0
5588	20	87	0	0	0	0	0	0	0	0
7584	20	509	0	0	0	0	0	0	0	0
7649	20	482	0	0	0	0	0	0	0	0
G Total		**116358**	**48896**	**37212**	**17569**	**871**	**979**	**5108**	**2474**	**2113**

Performance of FPT Programme since Inception

Duration	A.I.	Pregnancies	CR%	Calvings	Females born	Daughters recorded	Av. AFC (Mo.)	Av. Milk Yield (kg./days)	Daughters available for recording
2001-02	493	184	37.3	-	-	3	56.1	7.9	-
2002-03	1908	723	37.9	229	135	20	49.7	7.8	-
2003-04	1858	629	33.9	472	245	26	51.1	8.0	-
2004-05	2435	726	29.8	466	215	14	46.1	8.0	-
2005-06	2822	967	34.3	699	333	55	49.7	8.0	-
2006-07	3313	1178	35.6	755	357	50	48.0	8.4	-
2007-08	4015	1438	35.8	870	368	82	47.9	8.3	-
2008-09	4147	1622	39.1	1149	491	85	49.7	8.1	-
2009-10	5415	1878	34.7	1140	538	155	49.7	8.2	-
2010-11	6846	2289	33.4	1274	603	183	49.2	8.1	-
2011-12	7298	2814	38.6	1800	853	172	49.0	8.1	7
2012-13	8517	3463	40.7	2497	1155	257	47.5	7.9	30
2013-14	8014	3380	42.2	2831	1303	208	47.1	8.1	192
2014-15	8316	3810	45.8	2958	1447	68	42.5	8.2	606
2015-16	6325	3054	48.3	3013	1383	1	34.9	8.0	591
2016-17	5289	2464	46.6	2236	1049				480
2017-18	6344	2579	40.7	1933	899				788
2018-19	7779	3299	42.4	2468	1192				503
2019-20	8690	4307	49.6	3235	1555				
2020-21	7991	4277	53.6	3878	1883	353		8.3	1229
2021-22	8543	3815	44.6	3309	1565	381	54.1	8.2	769
Overall	**116358**	**48896**	**41.8**	**37212**	**17569**	**2113**	**48.3**	**8.1**	**5195**

A.I., Conception, Calvings and Daughters Retained –13th Set

Bull No.	2234	2269	2304	3964	4059	5943	Total
AI	5060	3349	6134	131	214	31	**14919**
Pregnancies	2129	1445	2631	52	85	13	**6355**
Daughter Born	749	536	985	25	32	5	**2332**
Daughters Ear tagged	199	102	258	11	13	1	**584**
Daughter Calved	182	95	236	10	11	1	**535**
Complete Recording	173	92	229	10	10	1	**515**
Daughter Available	26	10	29	1	3	0	**69**

A.I., Conception, Calvings and Daughters Retained –14th Set

Bull No.	2357	2369	4093	4100	4196	4439	6014	6044	6136	Total
AI	1640	5454	253	110	143	214	146	166	202	**8328**
Pregnancies	701	2323	109	48	60	87	63	70	89	**3550**
Daughter Born	262	973	42	24	50	35	31	33	42	**1492**
Daughters available	76	179	20	16	6	24	19	14	32	**386**
Daughter Calved	62	145	14	12	6	21	15	10	24	**309**
Complete Recorded	59	145	13	11	6	21	15	9	24	**303**
Daughters to be recorded	17	34	7	5	0	3	4	5	8	**83**

A.I., Conception, Calvings and Daughters Retained –15th Set

Bull No.	**2371**	**2412**	**2417**	**2429**	**2459**	**4324**	**4328**	**4354**	**4363**	**4403**	**4438**	**6007**	**6139**	**6290**	**6405**	Total
AI	854	820	1605	991	917	1121	701	1069	588	624	564	579	407	371	411	**11622**
Pregnancies	378	367	707	430	383	505	314	461	257	272	257	247	183	159	180	**5100**
Daughter Born	137	139	284	171	158	193	125	168	98	97	96	97	71	59	63	**1956**
Daughters available	98	70	163	109	54	67	60	103	59	55	54	29	40	30	35	**1026**
Daughter Calved	53	49	89	44	31	41	34	54	37	26	35	11	20	19	22	**565**
Daughters Complete Recorded	41	38	76	39	28	33	35	45	33	23	33	10	18	18	20	**490**
Daughters to be recorded	57	32	87	70	26	34	25	58	26	32	21	19	22	12	15	**536**

A.I., Conception, Calvings and Daughters Retained –16th Set

Bull No.	**1027**	**1053**	**1064**	**2383**	**2467**	**2501**	**4592**	**4623**	**4705**	**4889**	**6379**	**6409**	**6646**	**6753**	**29M**	**TOTAL**
AI	425	278	0	1069	856	1161	386	0	1074	888	174	260	341	52	489	**7453**
Pregnancies	190	127	0	471	383	520	173	0	476	403	82	117	154	24	222	**3342**
Daughter Born	74	48	0	177	146	199	61	0	188	157	33	42	63	7	82	**1277**
Daughters available	26	18	0	112	71	130	23	0	119	84	11	21	39	0	44	**698**
Daughter Calved	15	11	0	50	34	40	10	0	35	32	6	7	22	0	15	**277**
Daughters Complete Recorded	2	0	0	6	3	12	5	0	12	9	0	0	1	0	0	**50**
Daughters to be recorded	24	18	0	106	68	118	18	0	107	75	11	21	38	0	44	**648**

A.I., Conception, Calvings and Daughters Retained –17th Set

Bull No.	**1148**	**2558**	**2565**	**2594**	**2607**	**4687**	**4715**	**4733**	**4837**	**6942**	**7010**	**51M**	**53M**	**B-1-330**	**Dara**	**Sikander**	**Total**
AI	674	1308	1192	1335	1291	857	741	454	584	381	286	890	362	368	147	207	**11077**
Pregnancies	327	604	545	609	610	392	336	209	237	190	132	411	173	171	78	96	**5120**
Daughter Born	128	237	215	259	252	166	142	86	98	76	56	123	119	69	33	41	**2100**
Daughters available	43	146	110	166	172	130	92	52	67	29	44	103	33	33	17	25	**1262**
Daughter Calved	0	1	2	5	2	6	2	0	1	0	7	11	0	0	0	0	**37**
Daughters Complete Recorded	0	0	0	0	1	0	0	1	0	0	0	2	0	0	0	0	**4**
Daughters to be recorded	43	146	110	166	171	130	92	51	67	29	44	101	33	33	17	25	**1258**

A.I., Conception, Calvings and Daughters Retained –18th Set

Bull No.	**1150**	**1198**	**1208**	**1209**	**1219**	**2645**	**2676**	**2677**	**2689**	**4905**	**4928**	**4995**	**5031**	**7094**	**7147**	**7227**	**7263**	**5147**	**Total**
AI	689	0	761	763	952	1540	1416	685	743	977	0	803	0	582	748	763	563	**1051**	**13036**
Pregnancies	331	0	382	389	489	762	684	328	370	472	0	415	0	294	382	392	298	541	**6529**
Daughter Born	160	0	148	176	210	305	284	145	151	211	0	188	0	115	163	163	110	208	**2737**
Daughters available	92	0	105	106	152	153	168	83	60	129	0	92	0	70	89	100	61	146	**1606**
Daughter Calved	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Complete Recorded	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Daughters to be recorded	92	0	105	106	152	153	168	83	60	129	0	92	0	70	89	100	61	146	**1606**

A.I., Conception, Calvings and Daughters Retained –19th Set

Bull No.	**1315**	**2674**	**2737**	**2759**	**2767**	**2781**	**5181**	**5232**	**5246**	**5310**	**5320**	**5333**	**5374**	**5375**	**7604**	**Total**
AI	940	1205	1070	1495	0	0	833	839	885	922	1038	1004	745	0	977	**11953**
Pregnancies	414	448	500	724	0	0	384	410	420	352	465	456	329	0	333	**5235**
Daughter Born	0	142	203	97	0	0	126	144	177	128	58	52	77	0	0	**1204**
Daughters available	0	100	129	45	0	0	76	70	110	61	9	9	36	0	0	**645**
Daughter Calved																
Complete Recorded																
Daughters to be recorded																

A.I., Conception, Calvings and Daughters Retained –20th Set

Bull No.	**2397**	**2814**	**2831**	**2838**	**2847**	**2848**	**2850**	**3004**	**5427**	**7584**	**7649**	**5481**	**1454**	**5588**	**5588**	**Total**
AI	260	0	0	0	0	0	0	40	449	509	482	165	116	87		**2108**
Pregnancies																
Daughter Born																
Daughters available																
Daughter Calved																
Complete Recorded																
Daughters to be recorded																

Set-wise AI, Conception and daughters retained

Set no.	No. of Bulls used	AI	Preg.	Calving		Daughters Retained			Daughters Recorded	Av. AFC (Mo.)	Av. Milk Yield (kg)	Daughters to be recorded
				Total	Female	Up to 1Year	Up to 2 Year	3 Year & above				
6th	11	2323	943	669	300	0	0	24	24	52.0	7.9	0
7th	9	1755	651	436	206	0	0	20	20	49.4	8.0	0
8th	17	3542	1318	982	461	0	0	34	34	50.3	8.1	0
9th	15	5156	1970	1331	594	0	0	83	83	47.6	8.2	0
10th	11	5396	2094	1542	690	0	0	133	133	48.1	8.3	0
11th	12	9478	3579	2326	1147	0	0	219	219	50.4	8.1	0
12th	8	8212	3110	2280	1073	0	0	238	238	49.4	8.1	0
13th	6	14919	6355	5048	2332	0	0	584	515	67.3	7.8	69
14th	9	8328	3550	3077	1492	0	0	386	303	65.2	8.3	83
15th	15	11622	5100	4215	1956	0	0	1026	490	52.8	8.2	536
16th	15	7453	3342	2724	1277	0	0	698	50	45.4	8.2	648
17th	16	11077	5120	4376	2100	0	2	1260	4	40.8	7.9	1258
18th	17	13036	6529	5672	2737	226	977	403	0	0	0	1606
19th	**15**	**11953**	**5235**	**2534**	**1204**	645	0	0	**0**	**0**	**0**	**0**
20th	**14**	**2108**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**
Total	**190**	**116358**	**48896**	**37212**	**17569**	**871**	**979**	**5108**	**2113**	**51.5**	**8.1**	**4200**

Bull- wise additional daughters completing 1st lactation from 13th set

Bull No.	Daughter No	Date of birth	Date of calving	Age at 1st calving (days)	Lact length	Lact. Yield
2234	5530	20-May-15	08-Sep-20	1938	305	2420.0
2234	3355	27-May-15	17-Jul-20	1878	305	2505.3
2234	5595	31-May-15	11-Oct-20	1960	305	2318.6
2269	3145	10-Mar-15	02-Mar-21	2184	305	2308.6
2269	5111	22-Oct-14	08-Jul-20	2086	305	2309.0
2269	5112	10-Feb-15	25-Oct-20	2084	305	2489.8
2269	2833	18-Oct-14	22-Jun-20	2074	305	2476.7
2269	2816	19-Oct-14	21-Jan-21	2286	305	2650.3
2304	2602	30-Apr-15	10-Apr-20	1807	305	2373.0
2304	5459	26-Jan-15	23-Apr-20	1914	305	2350.6
2304	5479	20-Jan-15	20-Jul-20	2008	305	2391.5
2304	2131	19-Dec-13	20-Apr-20	2314	305	2427.7
2304	2124	20-Apr-14	15-Apr-20	2187	305	2228.8
2304	3512	10-Jun-15	10-Apr-20	1766	305	2546.0
2304	3504	4-Jun-15	20-Dec-20	2026	305	2381.8
2304	2069	25-Apr-14	20-May-20	2217	305	2498.2
2304	2347	25-Apr-14	15-Jun-20	2243	305	2275.1
2304	3328	9-Mar-15	21-May-20	1900	305	2473.6
2304	3367	7-Mar-15	02-Jun-20	1914	305	2374.7
2304	3318	6-Feb-15	15-Oct-20	2078	305	2164.1
2304	2814	9-Jan-14	27-Apr-20	2300	305	2819.5
2304	2243	28-Apr-14	13-May-20	2207	305	2421.0
2304	2248	2-Mar-14	22-Sep-20	2396	305	2370.9
4059	3288	2-Jun-15	25-Jul-20	1880	305	2679.9
4059	3406	5-Jun-15	13-Jul-20	1865	305	2404.1
4059	2847	19-Jun-15	02-Aug-20	1871	305	2641.3

Bull- wise additional daughters completing 1st lactation from 14th Set

Bull No.	Daughter No.	Date of birth	Date of calving	Age at 1st calving	Lact. Length	Milk Yield
2357	3347	5-Apr-15	22-Jul-20	1935	305	2207.6
2357	2915	20-Oct-14	19-Apr-20	2008	305	2714.8
2357	6568	29-Sep-16	21-Jul-20	1391	305	2700.7
2357	5460	29-Jan-15	12-Aug-20	2022	305	2462.8
2357	3285	26-Jan-15	12-Sep-20	2056	305	2749.3
2357	3528	15-Jul-15	20-Nov-20	1955	305	2563.0
2357	3283	24-May-15	11-Apr-20	1784	305	2608.5
2357	2962	10-Oct-14	05-Jul-20	2095	305	2434.5
2369	3258	4-Feb-15	16-Mar-20	1867	305	2952.8
2369	3468	12-Jun-15	11-Sep-20	1918	305	2599.0
2369	2932	20-Jul-14	15-Jun-20	2157	305	2451.6
2369	5449	4-Apr-15	18-Jan-21	2116	305	2431.4
2369	3015	25-Mar-15	30-Nov-20	2077	305	2525.5
2369	2780	19-Oct-14	15-Dec-20	2249	305	2471.9
2369	2072	16-Oct-14	23-Mar-21	2350	305	2305.3
2369	5509	21-Dec-14	13-Jul-20	2031	305	2698.7
2369	2929	3-Jan-15	28-Dec-20	2186	305	2411.7
2369	5473	28-Dec-14	17-Jun-20	1998	305	2038.7
2369	5468	7-Jan-15	15-Jun-20	1986	305	2153.9
2369	5471	2-Jan-15	18-Nov-20	2147	305	2453.9
2369	5962	16-Apr-15	18-Dec-20	2073	305	2597.3
4093	1893	20-Dec-14	06-Jun-20	1995	305	2567.6
4093	3090	9-Feb-15	30-Apr-20	1907	305	2691.9
4093	3541	23-Jul-15	16-Feb-21	2035	305	2536.7
4093	2888	27-Jun-15	12-Jul-20	1842	305	2802.0

4093	3000	5-Aug-14	20-Oct-20	2268	305	2579.4
4093	3226	11-May-15	20-Aug-20	1928	305	2775.4
4100	2261	25-Jun-15	18-Feb-21	2065	305	2443.8
4100	3275	6-May-15	13-Sep-20	1957	305	2321.8
4100	2919	10-Jan-15	15-Oct-20	2105	305	2735.4
4100	2646	20-Apr-15	01-Apr-20	1808	305	2726.2
4439	2867	8-Sep-14	20-May-20	2081	305	2610.6
4439	2873	6-Jul-15	07-Oct-20	1920	305	2676.4
4439	3224	20-Aug-15	01-Jun-20	1747	305	2644.3
4439	3221	21-Sep-14	20-May-20	2068	305	2558.5
6014	3103	10-Mar-15	07-Jun-20	1916	305	2241.0
6014	2941	25-Jan-15	24-Apr-20	1916	305	2453.7
6044	3237	7-Mar-15	27-Mar-20	1847	305	2778.4
6044	3228	22-Feb-15	16-Jul-20	1971	305	2787.1
6136	5499	10-Feb-15	20-Apr-20	1896	305	2268.9
6136	5482	7-Feb-15	12-Jun-20	1952	305	3543.9
6136	5494	13-Feb-15	20-Oct-20	2076	305	2489.9
6136	5462	14-Feb-15	19-Apr-20	1891	305	2504.8
6136	2817	8-Oct-14	20-Jun-20	2082	305	2949.0
6136	3351	7-Mar-15	10-Oct-20	2044	305	2420.2

Bull- wise additional daughters completing 1st lactation from 15th Set

Bull No.	Daughter No.	Date of Birth	Date of Calving	Age at 1st Calving	Lact. Lenght	Total myield
2371	5679	5-Nov-15	22-Nov-20	1844	305	2512.8
2371	6511	6-Aug-16	21-Nov-20	1568	305	2652.3
2371	5538	22-Jun-15	13-Jun-20	1818	305	2470.9
2371	B6045	5-Apr-16	08-Aug-20	1586	305	2652.3
2371	6877	10-Oct-16	05-Nov-20	1487	305	2492.8
2371	B6408	15-Feb-16	24-Nov-20	1744	305	2427.8
2371	6863	12-Oct-16	03-Dec-20	1513	305	2339.9
2371	5516	17-Dec-15	13-Apr-20	1579	305	2259.2
2371	5513	18-Dec-15	13-Oct-20	1761	305	2300.5
2371	5573	16-Dec-15	20-Dec-20	1831	305	2385.8
2371	B6504	22-Aug-16	01-Aug-20	1440	305	2583.7
2371	B6700	27-Mar-16	25-Jul-20	1581	305	2364.3
2371	B6284	13-May-16	20-Jun-20	1499	305	2698.5
2371	B6313	15-May-16	12-Feb-21	1734	305	2357.1
2371	B6305	17-Mar-16	02-Mar-21	1811	305	2559.7
2371	B6482	12-Aug-16	20-Apr-20	1347	305	2676.5
2371	B6476	4-Sep-16	14-May-20	1348	305	2635.5
2371	5855	21-Jan-16	03-Aug-20	1656	305	2671.7
2371	5804	14-Aug-16	01-Aug-20	1448	305	2668.1
2371	6273	12-Feb-16	20-May-20	1559	305	2249.9
2371	B6554	25-Jan-16	07-Dec-20	1778	305	2732.0
2371	6826	19-Aug-16	20-May-20	1370	305	2363.9
2371	B6055	26-Jul-16	18-Sep-20	1515	305	2462.2
2371	B6276	26-Feb-16	12-Feb-21	1813	305	2508.1
2371	5976	19-Aug-15	23-Aug-20	1831	305	2216.4
2371	6238	2-Feb-16	19-Jul-20	1629	305	2450.2
2371	6453	15-Apr-16	01-Aug-20	1569	305	2597.4
2412	6367	25-Sep-16	04-May-20	1317	305	2447.5
2412	6414	20-Sep-16	16-Feb-21	1610	305	2567.8
2412	5929	2-Sep-15	09-Aug-20	1803	305	2526.8
2412	5974	4-Sep-15	14-Sep-20	1837	305	2555.0
2412	B0254	12-Jul-16	12-Dec-20	1614	305	2667.9
2412	5871	16-Dec-15	17-Feb-21	1890	305	2560.0
2412	5549	13-Sep-15	07-Jul-20	1759	305	2379.3
2412	6359	16-Aug-16	23-Dec-20	1590	305	2388.4
2412	B6360	25-Jul-16	23-Apr-20	1368	305	2269.0
2412	B6335	30-Jul-16	25-Aug-20	1487	305	2396.8
2412	B6658	15-Apr-16	16-Aug-20	1584	305	2400.7

2412	B6672	7-Mar-16	27-Sep-20	1665	305	2339.9
2412	5905	15-Jul-15	19-Nov-20	1954	305	2406.9
2412	5967	24-Aug-15	16-Jan-21	1972	305	2338.6
2412	6475	16-Aug-16	01-Mar-21	1658	305	2161.4
2412	6729	18-Aug-16	08-Mar-21	1663	305	2814.0
2412	6566	10-Sep-16	06-Jun-20	1365	305	2537.8
2412	B6293	14-Jul-16	15-Apr-20	1371	305	2625.4
2412	B6261	5-Feb-16	12-Dec-20	1772	305	2421.6
2412	6996	15-Aug-16	18-Nov-20	1556	305	2547.4
2412	5876	20-Dec-15	25-Jan-21	1863	305	2956.4
2412	6247	20-Nov-15	02-Nov-20	1809	305	2351.3
2412	5883	28-Dec-15	24-May-20	1609	305	2504.2
2412	B5775	10-May-16	21-Oct-20	1625	305	2780.1
2412	B6357	25-Jul-16	19-Aug-20	1486	305	2491.3
2412	B6435	28-Jul-16	27-Sep-20	1522	305	2395.2
2412	2933	5-Aug-15	10-Jan-21	1985	305	2571.0
2417	6712	19-Nov-16	27-Jul-20	1346	305	2684.8
2417	6572	5-Sep-16	20-May-20	1353	305	2446.0
2417	7157	8-Nov-16	21-Jul-20	1351	305	2637.3
2417	B6364	29-Sep-16	13-May-20	1322	305	2940.4
2417	B6477	5-Sep-16	21-Feb-21	1630	305	2518.2
2417	6976	20-Nov-16	15-Feb-21	1548	305	2469.7
2417	6421	24-May-16	09-Aug-20	1538	305	2607.4
2417	6889	1-Dec-16	15-Aug-20	1353	305	2512.6
2417	B6384	10-Jul-16	01-Nov-20	1575	305	2247.6
2417	6403	25-Sep-16	17-Feb-21	1606	305	2391.0
2417	B6084	10-Apr-16	18-Jul-20	1560	305	2726.6
2417	5616	30-Aug-15	20-May-20	1725	305	2236.2
2417	B6278	13-Feb-16	07-May-20	1545	305	2346.8
2417	B6286	10-Mar-16	12-Jun-20	1555	305	2576.8
2417	B6255	11-Jun-16	21-Sep-20	1563	305	2485.4
2417	5617	25-Sep-15	14-Nov-20	1877	305	2431.6
2417	B6256	29-Jul-16	13-Jan-21	1629	305	2531.4
2417	6735	8-Dec-16	01-Aug-20	1332	305	2651.4
2417	6817	15-Nov-16	14-Feb-21	1552	305	2725.2
2417	B6275	2-Jul-16	22-Apr-20	1390	305	2341.2
2417	B6277	19-Jun-16	20-Aug-20	1523	305	2513.1
2417	6822	22-Dec-16	16-Aug-20	1333	305	2556.3
2417	B6269	9-Apr-16	13-Oct-20	1648	305	2450.0
2417	B6319	7-Apr-16	03-Nov-20	1671	305	2481.5
2417	5648	10-Oct-15	05-Jan-21	1914	305	2584.9
2417	6820	17-Oct-16	20-Feb-21	1587	305	2468.1
2417	7168	10-Nov-16	21-Nov-20	1472	305	2466.8
2417	B6070	5-May-16	12-Jan-21	1713	305	2399.4
2417	6858	5-Dec-16	02-Oct-20	1397	305	2198.4
2417	6942	30-Sep-16	28-Nov-20	1520	305	2167.7
2417	7004	6-Oct-16	13-Jun-20	1346	305	2754.2
2417	B6333	15-Jul-16	20-Oct-20	1558	305	2087.7
2417	6701	26-Nov-16	02-Sep-20	1376	305	2523.9
2417	6704	6-Dec-16	10-Jan-21	1496	305	2608.2
2417	6790	17-Oct-16	17-Nov-20	1492	305	2980.8
2417	6254	10-Jul-16	25-Aug-20	1507	305	2493.2
2417	6903	20-Nov-16	16-Oct-20	1426	305	2551.8
2417	6281	5-Jul-16	22-Nov-20	1601	305	2350.5
2417	6911	15-Nov-16	13-Jan-21	1520	305	2443.6
2417	6825	4-Sep-16	18-Aug-20	1444	305	2396.8
2417	6897	1-Apr-17	11-Aug-20	1228	305	2531.0
2417	6270	8-Feb-16	01-Oct-20	1697	305	2574.1
2417	6899	15-Dec-16	28-Mar-21	1564	305	2607.4
2417	7196	5-Sep-16	22-Nov-20	1539	305	2515.3
2417	7189	10-Aug-16	17-Jan-21	1621	305	2481.7
2417	6948	5-Sep-16	20-Nov-20	1537	305	2453.3
2417	6944	30-Dec-16	25-Dec-20	1456	305	2321.8
2417	6931	25-Sep-16	18-Jan-21	1576	305	2442.4
2417	6568	26-Dec-16	25-Sep-20	1369	305	2324.1

2417	6397	9-Sep-16	19-Oct-20	1501	305	2486.3
2417	6427	25-Nov-16	20-Feb-21	1548	305	2625.8
2417	6714	28-Nov-16	02-Sep-20	1374	305	2670.2
2417	6462	20-Nov-16	01-Dec-20	1472	305	2505.6
2429	6413	5-Nov-16	19-Feb-21	1567	305	2531.1
2429	6720	9-Nov-16	07-Dec-20	1489	305	2399.9
2429	B6048	4-Apr-16	25-Apr-20	1482	305	2434.0
2429	6551	5-Nov-16	22-Jul-20	1355	305	2314.7
2429	6770	23-Oct-16	07-Mar-21	1596	305	2857.4
2429	6382	28-Oct-16	12-Jun-20	1323	305	2570.5
2429	6420	30-Oct-16	13-Jun-20	1322	305	2691.3
2429	2685	21-Oct-15	19-Jul-20	1733	305	2521.8
2429	B6029	20-May-16	04-Oct-20	1598	305	2714.6
2429	B6399	7-Sep-16	11-Dec-20	1556	305	2628.3
2429	5642	20-Oct-15	07-May-20	1661	305	2421.9
2429	B6037	15-Jul-16	22-Aug-20	1499	305	2538.8
2429	6924	10-Apr-17	15-Oct-20	1284	305	2213.5
2429	6768	21-Oct-16	15-Nov-20	1486	305	2711.3
2429	6886	28-Nov-16	02-Jul-20	1312	305	2207.5
2429	6805	20-Sep-16	27-Aug-20	1437	305	2488.4
2429	6759	7-Sep-16	05-Sep-20	1459	305	2851.6
2429	6521	11-Sep-16	03-Sep-20	1453	305	2666.6
2429	6486	7-Sep-16	05-Nov-20	1520	305	2916.9
2429	6485	10-Sep-16	18-Feb-21	1622	305	2827.4
2429	6495	22-Sep-16	20-Feb-21	1612	305	2760.7
2429	6865	24-Oct-16	02-Jun-20	1317	305	2595.5
2429	B6302	25-Feb-16	10-May-20	1536	305	2473.9
2429	B6082	10-Jun-16	06-Sep-20	1549	305	2503.6
2429	B6422	20-Jul-16	07-Jun-20	1418	305	2472.8
2429	6473	22-Sep-16	13-May-20	1329	305	2582.7
2459	B6583	5-Jul-16	20-Nov-20	1599	305	2327.4
2459	5567	21-Jun-15	21-Oct-20	1949	305	2109.8
2459	B3231	20-Aug-15	13-Apr-20	1698	305	2463.4
2459	7255	13-Jun-17	05-Mar-21	1361	305	2932.3
2459	B6303	7-Jun-16	20-Jul-20	1504	305	2683.1
2459	6233	10-Dec-15	05-Jun-20	1639	305	2351.1
2459	5441	17-Oct-15	07-Dec-20	1878	305	2608.0
2459	B6068	25-Jul-16	16-Dec-20	1605	305	2465.2
2459	7188	2-Aug-16	03-Aug-20	1462	305	2426.0
2459	6939	10-Sep-16	22-Feb-21	1626	305	2563.4
2459	7199	1-Aug-16	15-Apr-20	1353	305	2735.6
2459	6855	10-Dec-16	12-Aug-20	1341	305	2716.8
2459	3439	27-Dec-15	19-Sep-20	1728	305	2613.9
2459	5943	8-Sep-15	18-Oct-20	1867	305	2362.3
2459	5954	27-Jul-15	02-Sep-20	1864	305	2385.4
4324	6387	21-Apr-16	12-Sep-20	1605	305	2754.2
4324	B6363	31-Mar-16	01-Sep-20	1615	305	2313.1
4324	5938	16-Jul-15	22-May-20	1772	305	2619.4
4324	6381	19-Mar-16	11-Aug-20	1606	305	2753.2
4324	B6553	10-Mar-16	19-Feb-21	1807	305	2523.2
4324	B6693	27-Apr-16	15-Oct-20	1632	305	2368.9
4324	B6089	2-Apr-16	12-Jul-20	1562	305	2774.7
4324	5851	5-Apr-16	17-Feb-21	1779	305	2858.3
4324	3296	17-Jun-15	08-Jul-20	1848	305	2574.1
4324	3403	6-Jul-15	15-May-20	1775	305	2339.2
4324	3415	22-Sep-15	28-Apr-20	1680	305	2643.1
4324	3402	12-Dec-15	20-Aug-20	1713	305	2294.4
4324	3407	1-Jun-15	27-Nov-20	2006	305	2396.6
4324	B6399	20-Jul-16	10-Jun-20	1421	305	2330.5
4324	3452	21-Jul-15	18-Jul-20	1824	305	2283.2
4324	B6060	10-Jun-16	25-Dec-20	1659	305	2372.2
4324	B6471	10-Feb-16	10-May-20	1551	305	2474.7
4328	5411	10-Oct-15	10-May-20	1674	305	2691.7
4328	5941	26-Oct-15	16-Apr-20	1634	305	2792.4
4328	5923	23-Oct-15	07-Jun-20	1689	305	2656.6

4328	6215	31-Oct-16	10-Oct-20	1440	305	2605.8
4328	5593	15-Sep-15	17-Jun-20	1737	305	2314.1
4328	5582	10-Sep-15	17-Jul-20	1772	305	2305.3
4328	B6505	4-Oct-16	15-Jun-20	1350	305	2636.6
4328	6205	25-Sep-15	12-Jul-20	1752	305	2493.3
4328	5511	25-Oct-15	15-Apr-20	1634	305	2811.4
4328	5879	23-Nov-15	01-Aug-20	1713	305	2670.9
4328	5875	14-Nov-15	05-Dec-20	1848	305	2812.0
4328	B6489	2-Oct-16	11-Jun-20	1348	305	2701.8
4328	5888	11-Sep-15	18-Dec-20	1925	305	2702.8
4328	B3265	25-Oct-15	12-Oct-20	1814	305	2689.3
4354	3444	28-Aug-15	26-May-20	1733	305	2334.5
4354	B6481	5-May-16	30-Aug-20	1578	305	2595.1
4354	5926	26-Aug-15	03-Apr-20	1682	305	2682.7
4354	5907	12-Sep-15	21-Apr-20	1683	305	2849.5
4354	6443	20-Jun-16	12-Dec-20	1636	305	2446.4
4354	5917	10-Aug-15	15-Feb-21	2016	305	2401.3
4354	3018	20-Sep-15	03-Nov-20	1871	305	2790.7
4354	6456	13-Aug-16	02-Aug-20	1450	305	2560.3
4354	B5748	10-Sep-15	31-Mar-20	1664	305	2724.3
4354	B5727	9-Aug-15	07-Nov-20	1917	305	2643.8
4354	B5716	10-Aug-15	30-Dec-20	1969	305	2688.4
4354	B6346	24-Apr-16	14-Aug-20	1573	305	2660.9
4354	6193	15-Aug-15	05-May-20	1725	305	2603.4
4354	6991	25-Jun-16	23-Oct-20	1581	305	2747.5
4354	B5732	30-Sep-15	07-Oct-20	1834	305	2368.5
4354	B6374	25-Jul-16	17-Aug-20	1484	305	2394.6
4354	B5714	29-Aug-15	05-Oct-20	1864	305	2559.5
4354	B6488	30-Mar-16	01-Mar-21	1797	305	2649.5
4354	B6299	25-May-16	28-Nov-20	1648	305	2383.8
4354	3418	8-Jun-15	15-Sep-20	1926	305	2496.7
4354	6809	21-Aug-16	07-Jul-20	1416	305	2685.5
4354	6840	25-Aug-16	08-Nov-20	1536	305	2570.2
4363	3023	23-May-15	14-Jul-20	1879	305	2609.4
4363	B6099	24-Feb-16	10-Feb-21	1813	305	2477.5
4363	5512	20-Sep-15	19-Mar-20	1642	305	2759.0
4363	5818	11-Apr-16	01-Oct-20	1634	305	2756.2
4363	5417	10-Sep-15	12-May-20	1706	305	2574.7
4363	6216	1-Nov-15	04-Jul-20	1707	305	2739.4
4363	2631	9-Apr-15	07-May-20	1855	305	2473.4
4363	5503	10-Nov-15	12-Apr-20	1615	305	2227.4
4363	5598	25-Nov-15	10-Apr-20	1598	305	2411.5
4363	3442	1-Jun-15	04-Dec-20	2013	305	2408.8
4403	6454	13-Jan-16	08-Oct-20	1730	305	2859.0
4403	5942	28-Dec-15	08-Aug-20	1685	305	2820.5
4403	5924	10-Nov-15	19-Oct-20	1805	305	2578.4
4403	5632	18-Dec-15	03-Sep-20	1721	305	2395.3
4403	5675	15-Dec-15	24-May-20	1622	305	2388.4
4403	B6320	25-Apr-16	09-Jul-20	1536	305	2296.2
4403	5569	11-Oct-15	20-Apr-20	1653	305	2540.6
4403	5790	10-Dec-15	01-Jun-20	1635	305	2935.2
4403	6480	17-Feb-16	20-Jun-20	1585	305	2555.4
4403	5770	16-Jan-16	03-Aug-20	1661	305	2635.6
4438	3413	10-Dec-15	15-Jul-20	1679	305	2525.4
4438	6033	13-Jun-15	24-Jan-21	2052	305	2411.8
4438	5759	26-Nov-15	12-May-20	1629	305	2684.0
4438	5849	23-Nov-15	25-Nov-20	1829	305	2718.6
4438	5558	5-Oct-15	09-May-20	1678	305	2298.1
4438	6140	22-Jul-15	05-Sep-20	1872	305	2547.7
6007	6192	5-Nov-15	10-May-20	1648	305	2685.5
6007	5958	24-Sep-15	17-May-20	1697	305	2724.2
6007	5771	25-Dec-15	01-Dec-20	1803	305	2485.9
6139	B6005	13-Feb-16	19-Jun-20	1588	305	2669.3
6139	6756	18-Dec-16	09-Jan-21	1483	305	2529.7
6139	2920	5-Jul-15	12-Aug-20	1865	305	2500.3

6139	6565	16-Sep-16	22-May-20	1344	305	2682.2
6139	6587	21-Sep-16	25-Aug-20	1434	305	2605.3
6139	6810	19-Sep-16	10-Jul-20	1390	305	2590.0
6139	7167	10-Oct-16	23-Oct-20	1474	305	2456.5
6290	6014	3-Jul-15	19-Sep-20	1905	305	2587.3
6290	B6336	29-Jul-16	14-May-20	1385	305	2581.6
6290	6781	15-Nov-16	07-Aug-20	1361	305	2469.1
6290	B6295	17-Apr-16	07-Sep-20	1604	305	2646.6
6290	B6327	25-Mar-16	15-Oct-20	1665	305	2608.0
6290	6838	12-Nov-16	13-Nov-20	1462	305	2663.2
6290	3431	6-Aug-15	17-Apr-20	1716	305	2357.9
6290	3440	20-Aug-15	22-Apr-20	1707	305	2469.0
6290	B6081	20-Feb-16	08-Sep-20	1662	305	2414.9
6290	B6418	5-Aug-16	09-Nov-20	1557	305	2541.6
6405	3448	5-Jun-15	20-Apr-20	1781	305	2414.2
6405	B6034	20-Mar-16	12-Sep-20	1637	305	2399.9
6405	B6680	5-May-16	20-Feb-21	1752	305	2633.2
6405	B6309	28-Jun-16	25-Jul-20	1488	305	2288.9
6405	B6434	31-Mar-16	03-Jul-20	1555	305	2603.2
6405	6356	28-Apr-16	23-Oct-20	1639	305	2652.4
6405	6180	15-Dec-15	05-Jan-21	1848	305	2438.8
6405	5842	14-Mar-16	28-Mar-21	1840	305	2860.5
6405	6310	8-Aug-16	21-Apr-20	1352	305	2384.4
6405	6909	25-Oct-16	21-Jan-21	1549	305	2597.2
6405	6249	6-Jan-16	22-Jul-20	1659	305	3664.8
6405	B6450	30-Aug-16	18-Apr-20	1327	305	2449.0

Bull- wise additional daughters completing 1st lactation from 16th & 17th set

Bull No.	Daughter No	Date of birth	Date of calving	Age at 1st calving (days)	Lact length	Lact. Yield
1027	7363	26-May-17	05-Jan-21	1320	305	2585.2
1027	7384	16-Jun-17	02-Feb-21	1327	305	2226.6
2383	6598	15-Mar-17	16-Nov-20	1342	305	2539.1
2383	7161	24-Jan-17	10-Mar-21	1506	305	2240.0
2383	6947	15-Feb-17	27-Mar-21	1501	305	2617.9
2383	6708	9-Mar-17	02-Nov-20	1334	305	2769.0
2383	6834	22-Sep-16	30-Dec-20	1560	305	2639.1
2383	6773	12-Aug-16	18-Mar-21	1679	305	2388.8
2467	7215	30-Apr-17	10-Dec-20	1320	305	2501.3
2467	6992	25-May-17	17-Aug-20	1180	305	2773.2
2501	7125	15-Oct-17	10-Sep-20	1061	305	2587.9
2501	7008	15-Feb-17	17-Jul-20	1248	305	2641.9
2501	6830	15-Feb-17	17-Feb-21	1463	305	2269.5
2501	6437	10-Mar-17	19-Nov-20	1350	305	2573.1
2501	7365	18-Feb-17	25-Aug-20	1284	305	2472.4
2501	7104	10-Oct-17	01-Nov-20	1118	305	2583.8
2501	6715	26-Feb-17	17-Jan-21	1421	305	2438.1
2501	7153	5-Feb-17	02-Oct-20	1335	305	2560.0
2501	7195	2-Feb-17	20-Oct-20	1356	305	2516.2
2501	6758	10-Mar-17	25-Sep-20	1295	305	2567.5
2501	7244	25-Mar-17	20-Dec-20	1366	305	2539.0
2501	7178	8-Oct-16	03-Oct-20	1456	305	2493.1
4592	6779	15-Jan-17	12-Sep-20	1336	305	2462.0
4592	6884	7-Feb-16	10-Jul-20	1615	305	2781.2
4592	6433	5-Jan-17	24-Nov-20	1419	305	2334.6
4592	6428	20-Nov-16	23-Feb-21	1556	305	2467.5
4592	6431	10-Dec-16	15-Aug-20	1344	305	2203.7
4705	7169	17-Jan-17	13-Sep-20	1335	305	2661.2
4705	7159	13-Dec-16	21-Feb-21	1531	305	2750.1
4705	7184	7-Jan-17	15-Jan-21	1469	305	2682.9
4705	6747	10-Jan-17	05-Dec-20	1425	305	2551.1

4705	7122	5-Dec-16	23-Aug-20	1357	305	2717.2
4705	6725	22-May-17	01-Jan-21	1320	305	2849.4
4705	6705	27-Dec-16	10-Aug-20	1322	305	2620.8
4705	6719	24-Dec-16	15-Feb-21	1514	305	2575.3
4705	6571	4-Jan-17	20-Sep-20	1355	305	2508.4
4705	6900	15-Aug-16	25-Apr-20	1349	305	2103.1
4705	6871	15-Jan-17	16-Feb-21	1493	305	2377.1
4889	6743	18-Jan-17	07-Dec-20	1419	305	2695.8
4889	7179	25-Nov-16	19-Jul-20	1332	305	2703.2
4889	7158	19-Dec-16	17-Nov-20	1429	305	2728.0
4889	7160	24-Dec-16	10-Aug-20	1325	305	2671.0
4889	7186	12-Jan-17	24-Oct-20	1381	305	2810.6
4889	6867	20-Oct-16	05-Mar-21	1597	305	2612.1
4889	6915	28-Oct-16	20-Oct-20	1453	305	2223.3
4889	7200	20-Dec-16	06-Aug-20	1325	305	2460.9
6646	7335	28-Jul-17	07-Mar-21	1318	305	2768.8
2607	8169	6-Jul-17	18-Dec-20	1261	305	2507.8
4733	8200	13-Jul-17	05-Dec-20	1241	305	2451.5
M51	7234	20-Sep-17	17-Nov-20	1154	305	2473.9
M51	7408	25-Jun-17	11-Feb-21	1327	305	2300.5
4705	6571	4-Jan-17	20-Sep-20	1355	305	2508.4

Project Co-ordinator's observations on Field Unit performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned as per R E 2021-22		Released ICAR Share as per R E	Expenditure as per AUC		Balance (ICAR Share)
Total	ICAR Share		ICAR Share	State Share	
50.00	37.50	37.50	34.55327	11.51776	(+)2.94673

- Total 8543 AI's were performed and 3815 buffalos conceived using 12 bulls from 19th set and 08 bulls of 20th during report period. The conception rate reported 44.60 %.
- 3309 calving reported during the period out of which 1744 male and 1565 were female.
- At various centers 2743 female progenies of different age groups are standing for future recording
- 365 daughters calved during the year and 381 daughters recorded in 2021-22.

Recommendations:

- Semen doses of selected test bulls should be used in same proportion.
- Organize calf rallies of female progenies, milk competition and other awareness programme in the villages of participating farmers.

FIELD UNIT: ICAR-NDRI, KARNAL

a. Research Evaluation Performa

1. Name of Center and year of initiation : ICAR-NDRI, Karnal (2001-02)
2. Name of project In-charge : Dr. Vikas Vohra, Principal Scientist, AG&B
3. Activities assigned and targets fixed: : As per technical programme of the FPT Murrah Enclosed Tables 1-15
4. Activities carried out during the period : AI, Milk recording, Deworming, Vaccination, Camps, Calf Rally, Farmer Visit.
5. Selection of Bull Set wise : Bulls selected for 20th Set
6. Progeny test evaluation- set wise : As Specified
7. Technology developed / patent : Nil
8. Bulls for elite mating : As Specified
9. Feeding, Reproduction, Management study, if any: No
10. Gaps / Constraints / Shortfalls
    - A large movement of buffaloes due to sale-purchase in the villages.
    - The animals in the project, when tagged, fetch higher prices in the village hence frequently sold, leading to less number of daughters for recording.
    - Shortage of adequate funds to improve the coverage of AI and data recording the field
11. Further programme, activities, target : Enclosed

b. Financial Statement/ administrative evaluation Performa

1.	No. of Sanction posts and designation	Nil
2.	No. of posts filled	NA
3.	No. of posts vacant (vacant since when)	NA
4.	Funds released during the year	Rs. 16,00,000.0
5.	Previous balance (refunded)	Rs. 01,19,094.0 (Refund to Co-Unit)
6.	Funds Utilised	Rs. 15,97,992.0 (99.87% utilized)
7.	Closing Balance	Rs. 5,008.0.0

Research Target: 4500 AI in the villages **Target Achieved:** 5126 AI (113.9%)

Research Achievements

A total of 5126 AI was performed in Murrah Buffaloes under field conditions during 2021-22 and as a result 48.29% conception rate was obtained. The highest conception rate was achieved in the month of Oct-2021 (51.19%) and the lowest was found for the month of May-2021 (45.69%), when recorded till February 2022. Across the villages, the highest conception rate was observed in Rindal (50.97%) village and lowest in the Shekhpura (44.64%), when recorded village till February 2022. A total of 1793 (1021 male and 772 female) Murrah buffalo calves were born in the farmers' herds and performance data on Milk Recording 91 daughters have been recorded for evaluation of bulls under field conditions. The average lactation yield in the field was recorded as 2416.35 ± 53.41 kg daily milk yield in the recorded daughter were 8.05 kg/day. The total herd strength of registered females and the breedable females at different centers was 6529 and 5060, respectively. As many as 10 breeding bulls of belonging to the 19th Set and 5 breeding bulls of belonging to the 20th Set were used for AI during the year 2021-22.

Other Activities

The AG&B Division, NDRI, has organized an event "Support to the Dairy Farmers" under the SC-SP sub-fund of Network Project on Buffalo Improvement. Under this program the general-

purpose medicines, spray and calcium supplement were distributed as support to about dairy farmers belonging to the SC community from Bibipur Jatan, Byana, Shekhpura, Solen, Darar and Kurali Villages, district Karnal. The dairy farmers were also upraised about the scientific breeding and management practices of dairy buffaloes, with special emphasis on the role of calcium supplementation in buffaloes.

F 1. Herd Strength of Registered females under field unit as on 31-03- 2022

Name of Centre	OB	Addition	Deduction		
		New Reg. (Birth/ Purchase)	Sold	Death	CB
Darar	1977	141	174	9	1935
Kheriman Singh	1506	97	182	6	1415
Rindal	1093	102	99	8	1088
Sheikhpura	1292	131	165	8	1250
Kamalpur	763	134	52	4	841
Total	**6631**	**605**	**672**	**35**	**6529**

F2. Status of Breedable females under field unit as on 31-03- 2022

Name of Village	Heifers >3 years		Buffalo (NP)		Buffalo Pregnant	
	Total	Pregnant	In milk	Dry	In milk	Dry
Darar	274	158	368	78	167	64
Kheriman Singh	287	196	281	67	129	62
Rindal	226	149	179	44	182	54
Sheikhpura	371	197	192	72	267	78
Kamalpur	304	174	189	63	139	49
Total	**1462**	**874**	**1209**	**324**	**884**	**307**

Project activities

Visit of Dr.T.K. Datta, Project Coordinator cum Director ICAR-CIRB to the field units of FPT (Murrah) under ICAR-NDRI, Karnal


Dr. Dheer Singh, Joint Director Research, ICAR-NDRI to the field units of FPT (Murrah) under ICAR-NDRI and Progressive Farmers Felicitation at Kheriman Singh Village


Buffalo Calf Rally organized under NPBI (FPT) programme in Kheriman Singh Village on 29th November 2021


Buffalo Calf Rally organized under NPBI (FPT) programme in Kheriman Singh Village on 1st December 2021

F 3. Monthly AI under Field Unit during 01-04-2021 to 31-03-2022

Month	Centre / Village					Total
	Darar	**Kheriman Singh**	**Rindal**	**Shekhpura**	**Kamalpur**	
April 21	80	60	80	80	65	365
May	65	55	55	82	56	313
June	68	65	94	78	90	395
July	90	77	93	82	87	429
Aug.	95	94	86	84	90	449
Sept.	94	104	90	82	80	450
Oct.	90	107	92	80	92	461
Nov.	93	96	98	83	90	460
Dec.	113	112	94	80	96	495
Jan. 22	90	104	97	80	93	464
Feb.	80	93	86	70	84	413
March.	70	98	98	80	86	432
Total	**1028**	**1065**	**1063**	**961**	**1009**	**5126**

F 4 Bullwise AI at Different Field Unit Centers during the Period 1-4-2021 to 31-03-2022

Set No	Bull No	April	May	June	July	Aug	Sept	Oct.	Nov.	Dec	Jan	Feb	March	Total
19	1315				126	128	86	112	75	10				537
19	2674		60	60		87	16	18	70	48				359
19	2737	15	85	65	130	9			30		40			374
19	2759	14	60	88			44	40	39	30				315
19	5246								50	70				120
19	5310	131	17	85			156	30		94				513
19	5320	80	40		95	32	74	72	88	80	11			572
19	5333	65		38	28	97	48	92	47	10	41			466
19	5374		51	59	50	96	26	67	61	41				451
19	7604	60						30						90
20	2848									28	62		83	173
20	3004										40	76		116
20	5427									84	88	71	201	444
20	7584										172	181		353
20	7649										10	85	148	243
	Total	**365**	**313**	**395**	**429**	**449**	**450**	**461**	**460**	**495**	**464**	**413**	**432**	**5126**

F 5: Month – wise Conception at Different Field Units during the period 01-4-21 to 31/03/22

Month	Village / Centre							CR %
	Darar	Kherimann Singh	Rindal	Sheik hpura	Kamalpur	Total Conce.	Total AI	
April 21	37	29	44	40	31	181	365	**49.59**
May	32	25	24	38	24	143	313	**45.69**
June	35	31	48	36	38	188	395	**47.59**
July	47	44	47	38	38	214	429	**49.88**
Aug.	45	46	42	39	40	212	449	**47.22**
Sept.	47	53	42	41	38	221	450	**49.11**
Oct.	53	55	52	35	41	236	461	**51.19**
Nov.	48	46	44	38	40	216	460	**46.96**
Dec	50	54	48	37	43	232	495	**46.87**
Jan. 22	44	46	55	40	41	226	464	**48.71**
Feb.	37	44	46	33	38	198	413	**47.94**
March	-	-	-	-	-	-	-	**-**
Total	**475**	**473**	**492**	**415**	**412**	**2267**	**4694**	**48.30**
AI	958	967	968	881	923	**CR= 2267/4694*100=48.30%**		
CR%	49.58	48.91	50.98	47.11	44.64			

F 6: Monthwise Calvings at Different Field Unit Centers During the Period 01-04-2021 to 3-2022

Month	Darar		Rindal		Kherimann Singh		Sheikhpura		Kamalpur		Total	
	M	F	M	F	M	F	M	F	M	F	M	F
Apr 21	28	16	12	15	11	6	12	8	22	15	85	60
May	21	19	12	12	12	10	17	11	21	15	83	67
June	12	9	19	20	10	8	15	11	21	15	77	63
July	12	8	17	17	11	9	13	10	23	17	76	61
Aug.	14	9	30	27	12	11	15	12	23	18	94	77
Sept.	17	15	35	22	14	14	15	10	27	18	108	79
Oct.	16	12	34	25	14	11	16	10	24	16	104	74
Nov.	17	11	26	17	13	10	13	8	21	15	90	61
Dec.	14	13	23	17	16	13	12	8	17	12	82	63
Jan 22	11	8	20	17	15	13	14	10	18	12	78	60
Feb	14	10	13	12	18	11	19	13	15	10	79	56
Mar	13	10	12	10	8	7	19	15	13	9	65	51
Total	189	140	253	211	154	123	180	126	245	172	1021	772

M = Male: 1021 *F = Female: 772* *Total = 1793*

F 7. Bull wise Conception at different Field Unit Centers during 1-4-2021 to 31-03-2022

Set No	Bull No	April 21	May-21	Jun-21	Jul-21	Aug. 21	Sept. 21	Oct. 21	Nov. 21	Dec. 21	Jan. 2022	Feb. 22	Mar-22	Total
19	1315				58	59	46	54	36	5				258
19	2674		26	32		40	8	8	29	23				166
19	2737	8	41	32	68	4			15					168
19	2759	7	28	43			22	18	17	13				148
19	5246								24	32	36			92
19	5310	60	8	39			75	13		48				243
19	5320	44	18		51	15	38	39	44	36	5			290
19	5333	31		17	15	45	20	52	23	5	27			235
19	5374		22	25		49	12	35	28	19				190
19	5375				22									22
19	7604	31						17						48
20	2848									14	31			45
20	5427									37	42	33		112
20	7584										79	92		171
20	7649										6	39		45
20	3004											34		34
	Total	**181**	**143**	**188**	**214**	**212**	**221**	**236**	**216**	**232**	**226**	**198**		**2267**

This table will be updated in July-2022

F8. Bullwise Calving at Different Field Unit Centers during 1-4-2021 to 31-3-2022

Month		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan	Feb	Mrch	**Total**
1150/18	M	3												3
	F	5												5
1208/18	M	8	8											16
	F	5	5											10
2645/18	M				9	3								12
	F				6	3								9
2676/18	M		9	4	19									32
	F		6	2	15									23
2677/18	M				22	15								37
	F				16	9								25
4905/18	M	31	2											33
	F	20	2											22
4995/18	M	11			4	5								20
	F	6			4	7								17
5147/18	M				8									8
	F				9									9

7147/18	M		1	18										19
	F		6	19										25
7227/18	M	23	22											45
	F	14	17											31
7263/18	M	9	30	6										45
	F	10	19	4										33
2674/19	M					30	9						12	51
	F					24	8						10	42
2737/19	M					21						3	18	42
	F					15						2	16	33
2759/19	M					4				12	26	4	13	59
	F					4				9	20	3	10	46
5181/19	M		11	16		13	39	30	3					112
	F		12	12		13	25	21	2					85
5232/19	M			18	10	3	21	37	15					104
	F			15	9	2	14	23	11					74
5246/19	M			15	4		18	26	33	17				113
	F			11	2		18	21	22	12				86
5310/19	M									3	11	25	4	43
	F									4	8	21	1	34
5320/19	M										7	18	9	34
	F										6	11	8	25
5333/1	M										5	15		20
	F										3	10		13
5374/19	M												9	9
	F												6	6
7604/19	M						21	11	39	50	29	14		164
	F						14	9	26	38	23	9		119
Total		**145**	**150**	**140**	**137**	**171**	**187**	**178**	**151**	**145**	**138**	**135**	**116**	**1793**

M = Male: 1021 *F = Female: 772* *Total = 1793*

F. 9 Bull wise female progeny at different Field Unit Centers (0-12 months) as on 31/3/22

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Kamalpur	Total
1150/18		5				**5**
1208/18				10		**10**
2645/18			9			**9**
2676/18				8	15	**23**
2677/18	15			10		**25**
4905/18			5		17	**22**
4995/18	6	11				**17**
5147/18		9				**9**
7147/18		25				**25**
7227/18	21		7	3		**31**
7263/18		16			17	**33**
2674/19	8	18	3		13	**42**
2737/19	8	10		6	9	**33**
2759/19	4	29	4	9		**46**
5181/19	18	20	23	16	9	**86**
5232/19	5	12	17	11	28	**73**
5246/19	26	26	13		21	**86**
5310/19	20	9		5		**34**
5320/19			17	8		**25**
5333/19					13	**13**
5374/19			4		2	**6**
7604/19	9	21	21	40	28	**119**
Total	**140**	**211**	**123**	**126**	**172**	**772**

F. 10. Bull wise Live Female Progeny at different Field Unit s (1-2 yrs) as on 31/3/ 2022

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Kamalpur	Total
1150/18	15	7	7		14	43
1208/18	9	15	8	8	7	47
1209/18			11			11
1219/18				1	14	15
2645/18	4	24	4	14	37	83
2676/18	5	23	11	9	9	57
2677/18	3	6	2	10	3	24
2689/18	16	19	8	13	22	78
5147/18	27	7	4	7	5	50
7147/18	9		9			9
7227/18				6	19	25
7263/18	13		2			15
4905/19		15		8	2	25
4995/19	12	2	5	14	3	36
Total	**113**	**118**	**71**	**90**	**135**	**527**

F. 11. Bull wise Live Female Progeny at different Field Unit s (2-3 yrs) as on 31/3/ 2022

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Kamalpur	**Total**
M -29/16		4			2	**6**
1111/17	5					**5**
2222/17	2					**2**
2558/17		2		10		**12**
2565/17					9	**9**
2594/17				5		**5**
2607/17	9	3		3		**15**
4687/17		19			11	**30**
4715/17		2		1	10	**13**
4837/17		15	5	2		**22**
6942/17	4		5			**9**
7010/17		11				**11**
M-51/17	11	2				**13**
M-53/17	6		7			**13**
1150/18				8		**8**
7094/18	17		9	10	14	**50**
7147/18	10		8	11	15	**44**
7227/18			5	1		**6**
B-1-330			9	4	7	**20**
Total	**64**	**58**	**48**	**55**	**68**	**293**

F. 12. Bull wise Live Female Progeny at different Field Unit Centers (>3 Years) as on 31/3/2022

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Total
4438/15		2			**2**
1027/16		19		14	**33**
4592/16		30			**30**
4623/16		2			**2**
4705/16	8				**8**
4889/16		17			**17**
6379/16		4			**4**
6409/16		7			**7**
6646/16			8	3	**11**
6753/16	6		2		**8**
M-29/16		1			**1**
M-51/17			2	7	**9**
2222/17				4	**4**
2565/17				2	**2**
2594/17	6		6	2	**14**

4687/17	15		5		**20**
4715/17	8		5	12	**25**
4733/17	7			7	**14**
4837/17				4	**4**
6942/17			1	5	**6**
7010/17	5		7	5	**17**
Total	**55**	**82**	**36**	**65**	**238**

F 13. Bull wise daughters calved at different field unit centers during2021-22

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Total
2371/15		2			**2**
2412/15			1		**1**
2417/15			2	1	**3**
4324/15			1		**1**
4328/15	1		3		**4**
4354/15		2			**2**
4363/15			2	2	**4**
4438/15		1	1		**2**
6007/15		1			**1**
6139/15		1			**1**
6405/15		2			**2**
1027/16		2			**2**
1053/16				1	**1**
2467/16				1	**1**
2501/16	2		2		**4**
4592/16		4	2	4	**10**
4623/16	1	2			**3**
4705/16				5	**5**
4889/16	3	2			**5**
6379/16	1		2	2	**5**
6409/16	1	2	6		**9**
M-29/16		3	5	2	**10**
Total	**9**	**24**	**27**	**18**	**78**

F. 14. Bull wise daughters recorded at different field units during2021-22

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Total
6014/14		1			**1**
2371/15	1	1	2	1	**5**
2412/15	1		1		**2**
2417/15				3	**3**
2429/15			2		**2**
4324/15	2	1	2	2	**7**
4328/15			8		**8**
4354/15				4	**4**
4363/15		3	4		**7**
4403/15			2		**2**
4438/15		3	2		**5**
6007/15		2			**2**
6139/15		2		1	**3**
6290/15		3			**3**
6405/15		2			**2**
1027/16	1	1			**2**
2467/16				1	**1**
2501/16	3				**3**
4592/16		2	3	3	**8**
4623/16	3				**3**
4705/16				6	**6**
4889/16	4				**4**

6379/16	3				**3**
6409/16		2	1		**3**
M-29/16		1		1	**2**
Total	**18**	**24**	**27**	**22**	**91**

F 15.Bull-wise AI, conception, calving and daughters retained till completion of milk recording as on 31/03/2022

Sr. no.	Set No	Bull No.	AI	Conc eptions	Calvings		Daughters retained upto				Complete Recording
					Total	Female	1 Year	2 Year	3 Year	Calving	
1	6	1836	28	15	6	3				0	0
2	6	4506	282	117	57	30				18	9
3	6	4523	317	158	127	62				12	10
4	6	4619	183	74	37	20				14	14
5	6	4637	156	60	50	15				6	6
6	6	4640	190	76	48	14				12	8
7	7	1419	241	86	40	25				10	10
8	7	1727	103	40	29	5				6	6
9	7	1746	112	57	48	19				9	9
10	7	1749	63	39	28	12				5	5
11	7	1796	95	53	24	10				4	4
12	7	2121	62	29	18	10					
13	7	2133	282	171	94	49				13	14
14	7	2184	384	178	109	46				19	26
15	7	2331	270	92	70	32				12	10
16	7	2363	216	85	52	26				8	6
17	7	4807	82	42	17	14				8	7
18	7	4915	389	152	63	33				14	14
19	8	1492	146	46	17	8				4	4
20	8	1509	37	20	12	6				5	3
21	8	1867	27	15	5	2				1	1
22	8	1868	46	13	8	4				4	4
23	8	1875	101	48	27	16				8	7
24	8	1893	224	127	55	25				8	6
25	8	2250	217	99	79	34				18	6
26	8	2308	118	58	38	23				8	7
27	8	2422	163	63	38	19				5	5
28	8	2479	150	42	28	10				7	7
29	8	2522	71	25	8	7				1	1
30	8	4813	255	107	61	29				23	14
31	8	4865	325	109	55	25				12	10
32	8	5049	120	49	41	17				10	8
33	8	5054	435	200	107	45				21	20
34	9	1575	291	105	58	29				20	18
35	9	1903	82	34	17	9				3	5
36	9	1913	127	35	25	11				3	6
37	9	1940	101	50	37	23				12	11
38	9	1964	127	66	61	29				14	14
39	9	1994	57	24	19	11				3	3
40	9	2582	394	147	88	47				20	16
41	9	2592	301	124	86	38				19	25
42	9	2720	342	154	114	63				39	10
43	9	2910	202	79	46	25				22	8
44	9	5112	706	292	181	82				56	30
45	9	5197	176	89	72	42				33	11
46	9	5218	765	370	246	137				42	29
47	9	5312	64	23	16	6				1	
48	10	ND-1	207	100	62	34				29	25

49	10	ND-2	105	50	36	15				7	7
50	10	ND-6	305	146	104	43				1	
51	10	ND-8	217	94	92	48				18	13
52	10	507	187	86	45	23				14	10
53	10	1693	215	98	59	29				21	18
54	10	2045	221	81	52	19				2	4
55	10	2062	82	34	24	9				2	2
56	10	2073	310	132	128	57				42	25
57	10	2074	185	68	40	21				8	9
58	10	2083	184	74	36	13				3	8
59	10	2990	188	102	80	33				14	11
60	10	3103	309	135	94	44				31	17
61	10	3631	218	101	56	27				16	13
62	10	5396	200	93	73	33				26	14
63	11	H-10	190	100	88	41				21	10
64	11	H-12	482	230	192	95				24	16
65	11	2154	90	49	38	21				6	4
66	11	3226	553	211	140	60				19	18
67	11	3255	540	270	188	108				27	25
68	11	3267	497	243	164	93				16	11
69	11	3591	540	261	242	114				34	30
70	11	5414	515	176	173	96				54	48
71	11	5489	1313	598	483	215				73	60
72	11	5496	736	348	301	140				32	31
73	11	5516	966	429	314	162				38	29
74	12	R-10	34	19	11	7				2	
75	12	R-11	36	17	8	6				1	1
76	12	5604	61	32	25	13				1	1
77	12	5710	746	364	338	170				21	14
78	12	5720	1057	567	417	212				72	55
79	13	851	301	154	139	69				11	10
80	13	858	223	122	90	37				16	14
81	13	2234	74	40	28	12				4	2
82	13	2269	139	73	58	27				7	9
83	13	2304	183	85	62	29				3	3
84	13	3964	512	289	208	103				22	15
85	13	4059	266	108	87	42				10	7
86	13	5943	563	244	193	84				24	12
87	14	2357	72	40	38	16					
88	14	2369	108	64	59	29				7	8
89	14	4093	648	300	217	107				15	17
90	14	4100	417	208	171	87				6	7
91	14	4439	670	355	300	109				16	19
92	14	6014	1598	705	598	293				34	35
93	14	6044	791	344	302	139				32	22
94	14	6066	67	25	16	10				--	
95	14	6136	1559	873	756	382				40	34
96	15	2371	640	221	50	24				22	17
97	15	2412	469	222	120	58				10	8
98	15	2417	435	239	129	53				19	14
99	15	2429	83	51	33	15				2	2
100	15	2459	50	36	35	18				--	
101	15	4324	804	355	178	79				15	12
102	15	4328	582	263	171	83				19	17
103	15	4354	934	418	124	58				21	19
104	15	4363	551	122	102	49				13	21
105	15	4403	73	43	32	16				2	3

106	15	4438	450	200	116	53				10	9
107	15	6007	397	227	71	36				2	4
108	15	6139	742	386	144	71				24	18
109	15	6200	74	43	41	20				--	
110	15	6290	246	93	76	37				5	6
111	15	6405	406	125	31	15				7	7
112	16	M-29	652	422	212	98			6	10	2
113	16	1027	456	248	166	86				2	2
114	16	2383	148	88	64	29					
115	16	2467	222	117	60	27				1	1
116	16	2501	388	183	105	48				7	3
117	16	4592	661	386	295	134				16	9
118	16	4623	229	104	89	38				5	4
119	16	4705	451	249	161	69				7	6
120	16	4889	370	173	143	59				7	5
121	16	6379	372	179	124	60				8	4
122	16	6409	440	212	141	60				11	3
123	16	1053	112	60	31	15				1	
124	16	6646	275	150	83	37					
125	16	6753	161	87	49	20					
126	17	2565	147	68	60	27			9		
127	17	2594	324	126	92	40			5		
128	17	2607	245	114	76	35			15		
129	17	4687	479	208	181	82			30		
130	17	4715	555	228	194	85			13		
131	17	4733	202	100	93	38					
132	17	4837	459	153	111	49			22		
133	17	7010	447	201	176	78			11		
134	17	Daara	253	86	73	29			5		
135	17	M-51	407	187	158	62			13		
136	17	6942	372	177	123	54			9		
137	17	Sikander	235	105	78	34			2		
138	17	M-53	345	163	95	41			13		
139	17	2558	280	138	87	38			12		
140	17	B 1 330	311	145	92	41			20		
141	18	7094	757	356	273	115			50		
142	18	7147	983	410	304	132	25	18	44		
143	18	7227	569	282	212	93	31	25	6		
144	18	4905	498	219	191	76	22	25			
145	18	1150	424	199	163	70	5	43	8		
146	18	7263	479	207	166	66	33	15			
147	18	1208	394	191	150	63	10	47			
148	18	1209	138	62	35	14		11			
149	18	1219	110	51	17	6		15			
150	18	2645	720	281	254	106	9	83			
151	18	2676	619	278	222	95	23	57			
152	18	2677	450	215	135	53	25	24			
153	18	2689	637	257	243	102		78			
154	18	4995	449	207	152	60	17	36			
155	18	5147	443	223	162	71	9	50			
156	19	5181	674	324	197	85	85				
157	19	5232	554	258	178	74	74				
158	19	5246	601	294	199	86	86				
159	19	7604	753	174	283	119	119				
160	19	2674	495	235	93	42	42				
161	19	2737	464	212	75	33	33				
162	19	2759	526	165	105	46	46				

163	19	5310	619	243	77	34	34				
164	19	5320	618	290	59	25	25				
165	19	5333	515	235	33	13	13				
166	19	5374	451	212	15	6	6				
167	19	1315	537	258							
168	20	2848	173	45							
169	20	5427	444	112							
170	20	7584	353	171							
171	20	7649	243	45							
172	20	3004	116	34							
Total			**62045**	**28080**	**18769**	**8669**	**772**	**527**	**293**	**1739**	**1386**

F 16. Performance of FPT Programme on Farmer's Buffaloes NDRI unit as on 31.03.2022

Duration	AI	Pregnancies	CR%	Calvings	Females Born	Daughters Recorded	Av. AFC (months)	Av. Milk Yield (kg/day)	Daughters Available for Future Recording
2004-05	2223	993	41.97	710	333	34	41.4	7.55	
2005-06	2224	994	42.97	875	400	45	45.4	6.11	
2006-07	2193	976	33.5	918	440	65	46.7	6.87	
2007-08	2594	1212	46.72	1140	517	109	46.8	7.29	
2008-09	2529	1190	47.05	1086	503	138	45.3	7.36	
2009-10	2739	1377	50.27	1159	569	211	45.3	7.08	
2010-11	2747	1399	50.92	1225	560	183	44.2	7.68	21
2011-12	2995	1600	53.42	1260	605	133	45.2	7.82	78
2012-13	2905	1422	48.95	1159	569	138	42.9	7.29	109
2013-14	4419	2242	51.27	1225	560	119	42.6	7.37	168
2014-15	3941	2033	51.58	1860	905	83	41.58	8.60	298
2015-16	3905	1994	51.06	1648	768	87	43.02	7.69	58
2016-17	3916	1975	50.43	1524	722	85	48.56	8.07	125
2017-18	3241	1605	49.52	1397	640				485
2018-19	4315	1995	46.23	1030	456				529
2019-20	4571	1999	46.96	1532	647				289
2020-21	4874	1928	47.76	1559	640				286
2021-22*	5126	2267	48.32	1793	772				296
Overall	**61457**	**29201**	**47.51***	**23100**	**10606**	**1520**	**44.80**	**7.48**	

Conception of March. 2021 will be added in July 2022

PROPOSED ACTION PLAN FOR 2022-23

- Thrust will be to bring more number of buffaloes under the AI coverage and to retain most of the female progeny up to the completion of their first lactation, if adequate funding is being provided more farms/villages in the vicinity of project area having relatively large herd size (10-15 breedable buffaloes) will be identified and included in the project.
- Efforts will be made to improve the conception rate by balanced feeding through supplementation of mineral mixture offered to farmers as an incentive and by timely heat detection and proper time AI.
- The work of identification of progeny born in the field by ear tagging will continue so that and the progenies born will be are properly identified.
- Organization for Infertility and Veterinary aid campaigns, deworming and tick control programmes on mass level, awareness programme for balanced feeding and mastitis control

program will be a regular practice in various adopted village through Kisan Sangosthees and Scientific panel discussion with various buffalo breeder groups.

- Calf rallies will be given more emphasis to encourage the farmers for up-gradation of breeds and rearing progeny with improved dairy husbandry practices.
- Schedule for determining genetic improvement and enhancement in productivity at farmers' herd shall be developed to document the impact of the project. It will also cover animal health management as being undertaken a regular process while performing the breeding and sire evaluation activities.
- The performance recording in terms of monthly recording of milk yield of the daughters and their dams will continue. Finally, the data generated on AI's, conception rate, milk production and performance traits will be supplied to coordinating unit for analysis as per ICAR Test Day recording schedule.
- Elite buffaloes will be identified in the field and mated with proven bulls for production of young bulls.
- There is need to develop modalities for procuring such superior young male calves for future breeding and providing necessary funds for procuring males.

Project Co-ordinator's observations on field performance

Financial Statement for the year 2021-22 (Rs in Lakhs)

Sanctioned R E 2021-22		Released ICAR	Expenditure as per AUC		Balance
Total	ICAR Share	Share as per R E	ICAR Share	State Share	
16.00	16.00	16.00	15.97992	--	(+) 0.05008

- A total of 5126 AI was performed in adopted villages with the semen of 10bulls of 19th set and 5 of 20th sets for test mating during 2021-22.
- The conception rate was reported 48.29 % during 2021-22.
- Total 1793 calvings reported in the farmers' herd (1021 male and 772 female).
- During the report period 78 daughters calved and 91 daughters completed first lactation milk yield.
- As on 31st March 2022: total 1830 daughters of various age groups (0-12 months: 772, 1-2 years: 527, 2-3 years: 293 and > 3 year: 238) are standing in field for future recording.

Recommendations:

- Action to be taken to record maximum daughters first lactation milk yield. The numder of daughters completed the recording are less.
- Meeting and interface with field workers-farmers-scientist to be organized frequently in field and at Institute.

SUMMARY OF RESEARCH ACHIEVEMENTS AND PROGRESS OF THE PROJECT

Selection and use of Breeding Bulls for Murrah breed

From July 93 till date test mating from 19 sets of Murrah breeding bulls have been completed and test mating of 20th set is continuing from January 2022 and complete in June 2023. Brief summary of the duration, the number of bulls, average of the dam's best yield and highest dam's yield in each set is shown below.

Twenty sets of bulls used under Network Project on Buffalo since July 1993.

Set No.	Duration	Centrewise No. of bulls						Total Bull	Av. of 305 day or less dams best yield (kg)	Highest dam 305 day yield (kg)	305 day or less herd average (kg)
		CIRB	NDRI	GADVASU	LUVAS	NDUAT	IVRI				
1.	July, 1993 to Dec., 1994	2	9	0				11	3050	4114	1820/501
2.	Jan., 1995 to June, 1996	4	5	6				15	3002	3898	1920/487
3.	July, 1996 to Dec., 1997	8	5	2				15	2876	3275	2053/476
4.	Jan., 1998 to June, 1999	5	4	5				14	2999	3401	1973/457
5.	July, 1999 to Dec., 2000	6	5	4				15	3120	3898	1943/551
6.	Jan., 2001 to June 2002	5	5	4	2			16	3055	3898	1972/562
7	July 2002 to Dec., 2003	5	2	4	1			12	2928	3544	2017/505
8.	Jan., 2004 to June 2005	5	5	4	2			16	2928	3690	2056/511
9.	July 2005 to Dec. 2006	4	5	5	1			15	2923	3336	2008/458
10.	Jan., 2007 to June 2008	3	1	5	1	3	1	14	2829	3369	2130/509
11.	July 2008 to Dec., 2009	4	4	3	1	1	1*	14	2792	3051	2046/483
12.	Jan., 2010 to June 2011	1	3	3	1		3**	11	3362	5192	2115/384
13.	July 2011 to Dec., 2012	2	1	3			2	8	3205	3805	2199/380
14.	Jan., 2013 to June 2014	4	4	3			1	12	3451	4636	2356/288
15.	July, 2014 to Dec., 2015	6	5	4				15	3350	4636	2361/335
16.	Jan., 2016 to June 2017	5	4	3	3			15	3762	4636	2349/280
17.	July, 2017 to Dec., 2018	10	2	4				16	3526	4668	2449/315
18.	Jan., 2019 to June 2020	3	4	4	4			15	3284	3867	2586/333
19.	July, 2020 to Dec., 2021	7	1	3	1	-	-	12	3435	4069	2607/374
20.	Jan., 2022 to June 2023	7	2	7	2	-	-	18	3646	4814	2625/367

* bulls from Deedwadi ** Two from Redhu Farm

List of bulls selected for 19th set (Murrah Breed)

Sr. No.	Bull No.	Location	Date of Birth	Dam No.	Sire No./ Set No	Dam's best lact. 305 day or less yield (kg)/Peak yield(kg)
1.	1315	LUVAS	18-11-16	708	2045 PT-X	3824/18.4
2.	2674	GADVASU	01-03-16	2532	2412 - XV	3583/23.0
3.	2737	GADVASU	04-08-17	2543	2383 - XVI	3241/22.8
4.	2759	GADVASU	0911-17	2502	2133 PT - XI	3340/20.7
5.	5181	CIRB	11-04-17	4340	3591 PT - XI	3428/17.9
6.	5232	CIRB	06-08-17	4322	1354 PT - III	3568/17.0
7.	5246	CIRB	20-08-17	4672	4371 PT - V	3124/15.7
8.	5310	CIRB	23-12-17	4545	6646 - XVI	4069/20.0
9.	5320	CIRB	15-01-18	4017	1053 - XVI	3340/15.2
10	5333	CIRB	02-02-18	3485	1354 PT -III	3304/17.6
11	5374	CIRB	12-07-18	4344	1148 XVII	3244/17.4
12	7604	NDRI	18-06-18	6477	7010 - XVII	3158/16.0

Note: From each bull 10,000 semen doses are to be frozen.

List of bulls selected for 20th set (Murrah Breed)

Sr. no.	Bull no.	Location	**D.O.B.**	**Dam no.**	**Sire no.**	**Dam's All Lact 305 or less days Milk Yield kg**	**Highest Yield/ Best Peak Yield**
1.	5427	CIRB	10/11/18	3633	2594 Set 17	2726/ 2300/ 3241/ **3371**/ 3025/ 3211/ 3014/ Auct	3371/15.3
2.	5481	CIRB	29/03/19	4621	4733 Set 17	2002/ 1455/ **3332/** Auct	3332/16.6
3.	5500	CIRB	15/07/19	4934	1148 Set 17	2888/ 3171/ **3271**	3271/16.5
4.	5505	CIRB	22/07/19	4251	Dara Set 17	2407/ 3184/ **4138**/ 3784/ 2913/ Dry	4138/22.0
5.	5511	CIRB	27/07/19	4800	1148 Set 17	2612/ **3356**/ 3262/ Dry	3356/17.4
6.	5588	CIRB	15/10/19	4899	4687 Set 17	3505/ **4216**/ In 3rd lact	4216/20.0
7.	5592	CIRB	21/10/19	4241	Heera Field	2387/ 3232/ 2663/ 2949/ 3192/ **3242**/ / In 7th lact	3242/17.0
8.	1454	LUVAS	19/06/18	976	M-51 Set 17	2965/ 3288/ 3085/ **3355**	3355/17.4
9.	19	LUVAS	29/10/18	777	M-51 Set 17	2641/ 3242/ **3695**/ 3663	3695/21.6
10.	2793	GADVASU	06/07/18	2788	2467 Set 16	2971/ **3339**	3339/21.5
11.	2814	GADVASU	03/09/18	2905	2565 Set 17	2566/ 3045/ **3675**	3675/23.4
12.	2831	GADVASU	11/10/18	2897	Virat Field	1577/ 3049/ 4025/ **4814**	4814/28.7
13.	2838	GADVASU	02/11/18	2502	1354 PT Set 3	1834/ 3192/ **3340**/ 3288/ 2850/ 3257/ 2107	3340/22.7
14.	2848	GADVASU	22/12/18	2808	2558 Set 17	1625/ **3304**	3304/20.5
15.	2850	GADVASU	25/01/19	2973	2594 Set 17	2623/ **3683**	3683/20.6
16.	3004	GADVASU	13/10/16	Laado	Rustam Field	4716	4716/26.2
17.	7584	NDRI	30/03/18	6147	6253 Non-Set	2435/ **3600**	3600/16.5
18.	7649	NDRI	15/10/18	6735	2558 Set 17	**3203**/ 2755	3203/13.5

Note: From each bull 10,000 semen doses are to be frozen.

Health Evaluation and Semen Quality Testing: During the period under report, apparently healthy buffalo breeding bulls of different centres (CIRB Hisar, NDRI Karnal, GADVASU Ludhiana and LUVAS Hisar) all of Murrah breed and proposed for XX set for semen collection under Network Project on Buffalo were screened for TB, JD and Brucellasis etc.

Progeny Test Evaluation of Bulls: Data of 834 daughters born from the 15th set of bulls which completed 1st lactation was compiled and progeny test evaluated. Bull no. 4354 from CIRB Hisar, 6007 from NDRI, Karnal and 2459 from GADVASU, Ludhiana ranked 1st, 2nd and 3rd with breeding value 2589 kg, 2588 kg and 2587 kg respectively.

Progeny Test evaluation of 15th set bulls (Murrah July 2014 to Dec 2015)

Sire ID	Total no of daughters/ Sire	Average Daughter FLMY	Daughter Max FLMY	Breeding Value	Rank	% superiority
4354 / CIRB	**77**	**2645**	**3573**	**2589**	**1**	**1.67**
6007 / NDRI	**38**	**2683**	**3404**	**2588**	**2**	**1.61**
2459 / GADVASU	**44**	**2611**	**3404**	**2587**	**3**	**1.58**
4328 / CIRB	65	2600	3635	2584	4	1.48
2429 / GADVASU	48	2601	3962	2568	5	0.86
4363 / CIRB	48	2608	3217	2560	6	0.51
4403 / CIRB	39	2576	3540	2552	7	0.22
4324 / CIRB	60	2564	4004	2546	8	-0.04
4438 / CIRB	57	2527	3289	2536	9	-0.42
6405 / NDRI	55	2501	3740	2533	10	-0.55
6139 / NDRI	54	2515	3811	2531	11	-0.60
2371 / GADVASU	64	2528	3522	2524	12	-0.90
2412 / GADVASU	61	2476	4406	2511	13	-1.41
2417 / GADVASU	84	2456	3138	2503	14	-1.72
6290 / NDRI	40	2418	3069	2489	15	-2.27

Herd Average = 2546.67 kg; Total Daughter record analysed = 834; Average daughter / sire = 56

Progeny Tested bulls used under Network Project

The top ranking 25 % progeny tested bulls (2 to 3 bulls from each set) used for elite/ nominated matings from set I to set XV as selected from the centres are listed below. The pedigree detail, sire index and availability of frozen semen doses from each bull are under.

List of Progeny Tested Bulls 1st to 15th Set (Murrah breed)

Sr No.	Bull No.	Location	Date of Birth	Dam No.	Sire No.	Dam's best lact. 305-day yield (kg)	% superiority	Rank
Set - I								
1.	392	CIRB	06.04.89	238	PQ1	2594	22.8	I
2.	3567	NDRI	07.09.89	2408	2304	2877	6.4	II
3.	896	CIRB	27.07.87	911	644	3003	5.5	III
Set – II								
1.	761	CIRB	20-11-90	474	366	2878	9.37	I
2.	93	CIRB	03-11-90	-	PQ-1	22.0*	3.96	II
3.	829	CIRB	04-07-91	597	766	2626	3.53	III
Set – III								
1.	1354	PAU	12-12-92	762	989	3088	13.11	I
2.	1153	CIRB	13-08-93	701	896 PT	2540	12.27	II
3.	1061	CIRB	24-09-92	769	896 PT	2846	9.50	III
Set – IV								
1.	1506	PAU	25-04-95	-	988	3018	18.81	I
2.	1451	PAU	10-08-94	-	3567 PT	3401	10.44	II
3.	1437	PAU	04-04-94	797	636	3127	8.11	III
Set – V								
1.	4393	NDRI	10-12-95	2762	1908	3898	22.29	I
2.	4371	NDRI	23-10-95	2984	988	3258	14.90	II
Set –VI								

1.	1153	HAU	29-09-96	618	759	2675	13.31	I
2.	4506	NDRI	31-10-96	3527	3551	3512	9.29	II
3.	1933	CIRB	01-10-97	208	988	2650	6.92	III
Set – VII								
1	4915	NDRI	28-10-99	3521	2921	3437	17.26	I
2	1796	PAU	10-02-00	1386	1506 PT	3170	15.81	II
Set – VIII								
1.	1875	GADVASU	20-08-01	1669	558	2714	24.89	I
2.	4813	NDRI	17-01-99	3818	3966	3016	12.59	II
3.	2422	CIRB	19-08-00	1194	4371 PT	3369	9.41	III
Set – IX								
1	1994	GADVASU	16-06-03	1884	392 PT	2938	11.73	I
2	5258	NDRI	01-08-02	4066	1706	3305	10.52	II
Set -X*								
1.	1693	LUVAS	27-10-03	1050	392 PT	3194	1.23	1
2.	2045	GADVASU	24-02-04	1835	3567 PT	3369	1.23	II
Set -XI*								
1.	3267	CIRB	27-09-04	2263	1419	2489	0.20	I
2.	3591	CIRB	29-05-06 (P)	3590		2598	0.14	II
3.	2133	GADVASU	09-11-05	2041	1354 PT	2844	0.09	III
Set -XII*								
1.	2185	GADVASU	23-11-06	1898	1354 PT	3423	0.94	I
2.	183	CCS HAU	03-06-07	1374	1354 PT	2824	0.75	II
Set -XIII								
1.	2234	GADVASU	06-03-08	2138	5396	3114	14.80	I
2.	2269	GADVASU	17-12-08	2295	3631	3617	13.86	II
Set -XIV*								
1.	2357	GADVASU	24-07-10	P2488	1933 PT	3559	2.78	I
2.	6044	NDRI	15-01-09	430	4371 PT	3567	2.43	II
3.	4196	CIRB	10-05-10	3586	1153 PT	3304	2.27	III
Set -XV*								
1.	4354	CIRB	05-09-11	4353 Pur	UK (P)	3528	1.67	I
2.	6007	NDRI	15-09-08	5231	5396 X	3260	1.61	II
3.	2459	GADVASU	22-12-11	2489	1796 PT VII	4636	1.58	III

* BLUP Model used for evaluation

Semen freezing and balance stock for bulls under test

Centre wise test bulls of Murrah breed as on 31-03-2022 at various centres

CIRB			NDRI			GADVASU		
Bull No.	Set No	No of semen doses	Bull No.	Set No	Semen doses CIRB+NDRI	Bull No.	Set No	Semen doses CIRB+GAD
29 M	XVI	7266	6379	XVI	2257+7355	2383	XVI	1981+4677
4592	XVI	5975	6409	XVI	2207+4302	2467	XVI	2026+6822
4705	XVI	6199	6646	XVI	2023+2172	2501	XVI	2638+2915
4889	XVI	8000	6753	XVI	2508+5749	2565	XVII	439+6215
1027	XVI	6926	7010	XVII	2200+5226	2558	XVII	1194+14758
1053	XVI	6622	6942	XVII	2625+4560	2607	XVII	370+8645
1064	XVI	5816	7094	XVIII	1948+5974	2594	XVII	849+8925
M 51	XVII	8000	7147	XVIII	2248+1550	2645	XVIII	1794+ 8102
4715	XVII	6043	7227	XVIII	498+4428	2676	XVIII	2370+7210
4733	XVII	6376	7263	XVIII	2080+	2677	XVIII	2375+2104
4687	XVII	3988	7604	XIX	1345+760	2689	XVIII	737+5180
4837	XVII	7418	7584	XX	930+	2674	XIX	2612+1112
M 53	XVII	8000	7649	XX	940+3760	2737	XIX	475+3690
Sikander	XVII	3823				2759	XIX	2605+2823
Dara	XVII	1635				2814	XX	300+560
B-1-330	XVII	7953				2848	XX	20+1645

1148	XVII	7995				2850	XX	250+840
4905	XVIII	8000				3004	XX	65+1417
4995	XVIII	8000				2793	XX	70+840
5147	XVIII	8000				2831	XX	70+2160
1150	XVIII	8000						
1208	XVIII	8000						
1209	XVIII	7485						
1219	XVIII	4230						
5232	XIX	9635						
5181	XIX	8875						
5246	XIX	9240						
5310	XIX	8620						
5320	XIX	7961						
5333	XIX	8213						
5374	XIX	8203						
1315	XIX	6467						
5427	XX	660						
1454 (LUV)	XX	20						
Sub Total		**227644**			(23809+45836			(23240+90640)
					696445			**113880**
Grand Total								**411169**

Germplasm dissemination for breeding purpose (Murrah breed)

Superior germplasm disseminated from various centers is presented below.

Year	CIRB		GADVASU		NDRI	
	Bulls	Semen	Bulls	Semen	Bulls	Semen
1998-99	32	50	10	6000	15	1740
1999-00	26	100	22	5847	11	1320
2000-01	16	70	33	3449	9	2230
2001-02	18	21648	18	8579	8	5030
2002-03	18	2270	8	3205	9	2655
2003-04	53	3300	17	3977	15	15614
2004-05	15	1534	10	19675	8	4579
2005-06	4	372	15	1763	17	4123
2006-07	18	04	8	2227	9	574
2007-08	5	140	6	1777	5	433
2008-09	2	6375	7	4053	3	1232
2009-10	0	63974	5	8181	0	9404
2010-11	0	59546	5	22383	0	22405
2011-12	0	129099	4	53131	16	18129
2012-13	4	80081	2	41276	9	23751
2013-14	6	68635	28	24784	5	62054
2014-15	38	57761	21	13510	9	11966
2015-16	57	41866	37	24529	22	12792
2016-17	64	54077	21	18909	3	14805
2017-18	52	76704	11	25398	20	14554
2018-19	49	97657	4	55758	4	11700
2019-20	37	138906	3	52268	0	15949
2020-21	19	94320	37	3808	30	5400
2021-22	42	131968	22	57730	10	7625
Total	**575**	**1130457**	**354**	**462217**	**237**	**270064**

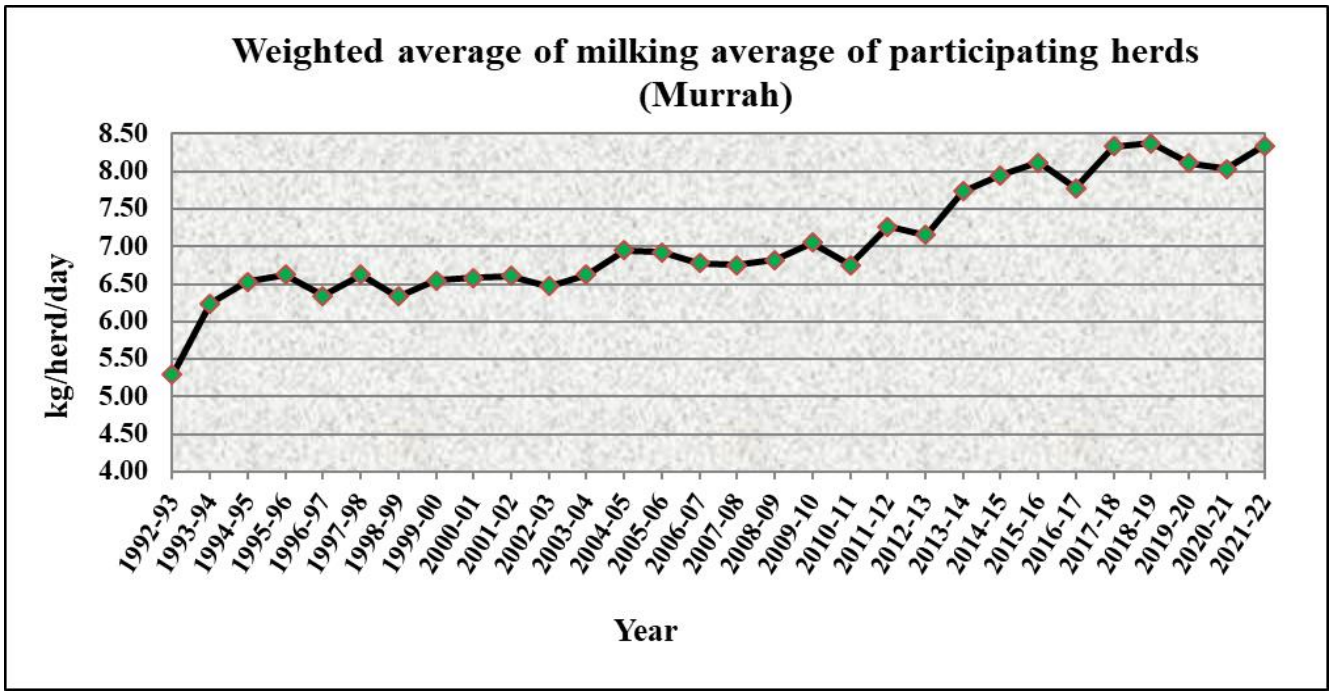
Performance Characteristics

Herd performance with respect to various production and reproduction traits at different participating centers has been compiled and presented as under.

Milking average per buffalo at various participating herds since 1992-93.

Year	CIRB	GADVASU	NDRI	LUVAS	IVRI	CCBF	NDUAT	Weighted average
1992-93	4.80 (165)	5.54 (149)			4.31 (22)	6.3 (65)		5.29 (403)
1993-94	5.65 (153)	6.20 (115)	7.80 (115)	6.3 (42)	4.62 (380	5.8 (62)		6.24 (525)
1994-95	6.09 (181)	6.09 (116)	8.39 (114)	7.2 (49)	3.90 (39)	6.3 (48)		6.53 (547)
1995-96	6.43 (1.53)	6.43 (123)	8.03 (109)	7.3 (54)	3.63 (29)	6.0 (82)		6.62 (550)
1996-97	5.62 (122)	6.17 (112)	7.90 (103)	7.0 (76)	3.63 (29)	5.7 (67)		6.34 (508)
1997-98	6.12 (121)	6.53 (116)	7.40 (119)	6.5 (68)	4.19 (28)	7.2 (58)		6.62 (509)
1998-99	6.77 (133)	6.26 (119)	5.93 (100)	6.2 (71)	5.79 (20)	6.5 (72)		6.33 (515)
1999-00	6.85 (137)	6.26 (109)	6.60 (90)	5.2 (60)	5.77 (23)	7.4 (98)		6.55 (521)
2000-01	6.68 (148)	6.70 (105)	6.65 (104)	6.7 (55)	5.42 (30)	6.5 (84)		6.58 (523)
2001-02	6.59 (147)	7.09 (94)	6.26 (90)	7.47 (48)	5.82 (32)	6.3 (81)		6.61 (492)
2002-03	6.27 (143)	7.22 (109)	6.23 (73)	7.5 (47)	4.94 (30)	5.9 (68)		6.47 (470)
2003-04	6.49 (151)	7.01 (108)	6.36 (80)	7.30 (68)	5.94 (37)	6.2 (57)		6.62 (501)
2004-05	6.39 (154)	7.33 (91)	7.39 (111)	7.70 (66)	5.99 (38)	6.70 (47)		6.95 (509)
2005-06	6.57 (151)	7.36 (74)	7.05 (107)	7.70 (63)	6.14 (46)	6.7 (39)		6.92 (479)
2006-07	6.45 (137)	7.03 (81)	6.70 (100)	7.8 (65)	6.15 (41)	6.8 (48)	6.52 (29)	6.78 (501)
2007-08	6.64 (146)	6.90 (70)	6.80 (104)	7.60 (66)	5.98 (62)		6.92 (22)	6.75 (470)
2008-09	6.50 (133)	7.07 (78)	7.09 (64)	7.10 (62)	6.69 (53)	6.4 (59)	6.66 (22)	6.82 (412)
2009-10	7.01 (106)	7.62 (83)	7.32 (91)	6.8 (69)	6.68 (45)		5.39 (27)	7.05 (421)
2010-11	7.45 (109)	7.21 (88)	5.83 (96)	7.3 (64)	5.88 (47)		5.60 (21)	6.75 (425)
2011-12	7.83 (110)	7.56 (88)	6.79 (66)		5.82 (41)	KVASU	Mamnoor	7.26 (305)
2012-13	7.74 (109)	7.74 (78)	7.35 (90)		5.66 (39)	4.82 (13)	4.70 (17)	7.15 (346)
2013-14	8.01 (105)	7.98 (61)	7.80 (101)	9.40 (62)	5.85 (45)	5.54 (19)	5.25 (11)	7.73 (404)
2014-15	8.25 (110)	7.97 (54)	8.05 (115)	8.70 (64)	6.80 (43)	**RC ER, Patna**	5.90 (22)	7.95 (408)
2015-16	8.04 (114)	8.04 (54)	8.43 (132)	9.90 (72)	6.48 (44)	7.45 (14)	5.81 (32)	8.12 (462)
2016-17	8.08 (133)	7.92 (53)	8.39 (85)	9.7 (60)	6.00 (55)	6.39 (19)	5.67 (43)	7.78 (448)
2017-18	8.71 (115)	8.03 (49)	8.23 (99)	10.3 (81)	5.77 (51)	4.30 (12)	--	8.33 (407)
2018-19	8.92 (101)	8.40 (68)	7.40 (112)	11.0 (76)	6.43 (50)	4.85 (15)	--	8.37 (422)
2019-20	9.66 (124)	8.31 (67)	6.67 (115)	10.4 (78)	5.95 (64)	5.12 (27)	--	8.11 (475)

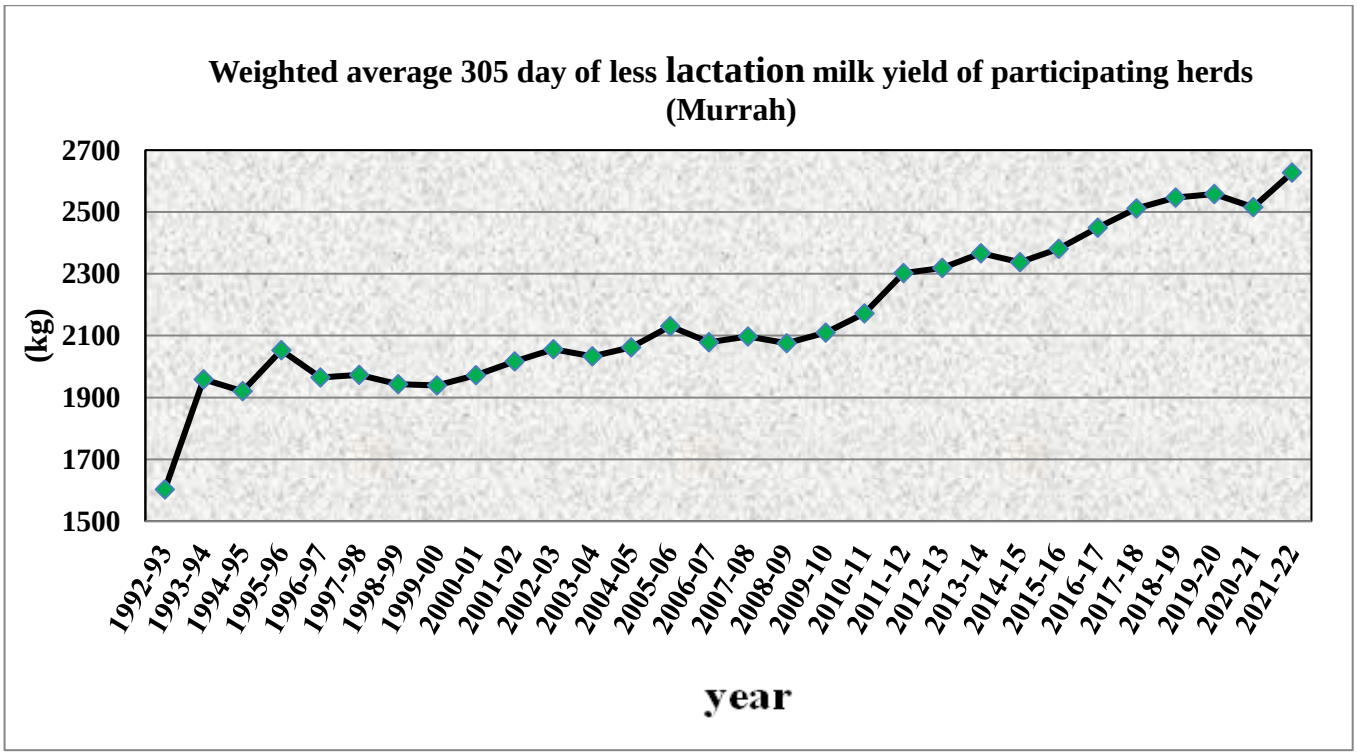
2020-21	9.91 (130)	8.22 (66)	6.6 (86)	9.6 (73)	5.84 (68)	4.42 (27)	--	8.03 (450)
2021-22	**10.07 (132)**	**8.42 (72)**	**7.7 (85)**	**9.25 (82)**	**5.86 (72)**	**5.44 (26)**	**--**	**8.34 (469)**



Average 305 day or less milk yield at various participating herds since 1992 – 93.

Year	CIRB	GADV ASU	NDRI	LUVAS	IVRI	CCBF/ KVASU	NDUAT/ Mamnoor	Weighted average
1992-93	1508±34 (137)	1730 (138)			1458±48 (34)	1899.1		1602 (309)
1993-94	1686±46 (148)	1948 (144)	2351.8 (137)	1818.8	1537±49 (28)	1746.0		1959 (457)
1994-95	1787±0 (206)	1877 (121)	2270.1 (128)	1912.7	1536±40 (32)	1896.7		1920 (487)
1995-96	1855±42 (147)	2008 (126)	2576.1 (106)	1987.5	1457±51 (27)	1950.4		2053 (476)
1996-97	1775±45 (173)	1948 (125)	2423.1 (105)	1880.8	1629±76 (20)	1714.1		1965 (498)
1997-98	1688±37 (123)	1995 (98)	2191.2 (128)	2103.7	1715±95 (23)	2006.8		1973 (455)
1998-99	1702±33 (153)	2101 (125)	2032.7 (112)	1964.7	1980±97 (22)	2179.7		1943 (551)
1999-00	2042±31 (141)	2041 (114)	1822.4 (102)	1688.7	2026±98 (18)	2134.9		1939 (439)
2000-01	1914±36 (173)	2032 (103)	2019 (126)	2183.1	1898±147 (20)	1875.0		1972 (562)
2001-02	1898±35 (152)	2175 (112)	1963±61 (91)	2119±46 (50)	2102±75 (19)	2000.0 (81)		2017 (505)
2002-03	1902±32 (148)	2144 (105)	2000.6 (81)	2522±13 (46)	2362.5 (55)	1789.1 (76)		2056 (511)
2003-04	1837±31 (148)	2233 (111)	1897 (29)	2162±42 (75)	2103±118 (26)	1881.9 (6)		2033 (395)
2004-05	1886±33 (167)	2270 (106)	2025 (98)	2134±44 (61)	2369±128 (10)	2114 (26)		2062 (494)
2005-06	1921±38 (149)	2327 (78)	2159 (142)	2252±47 (77)	2218±89 (32)	2085 (32)		2130 (509)

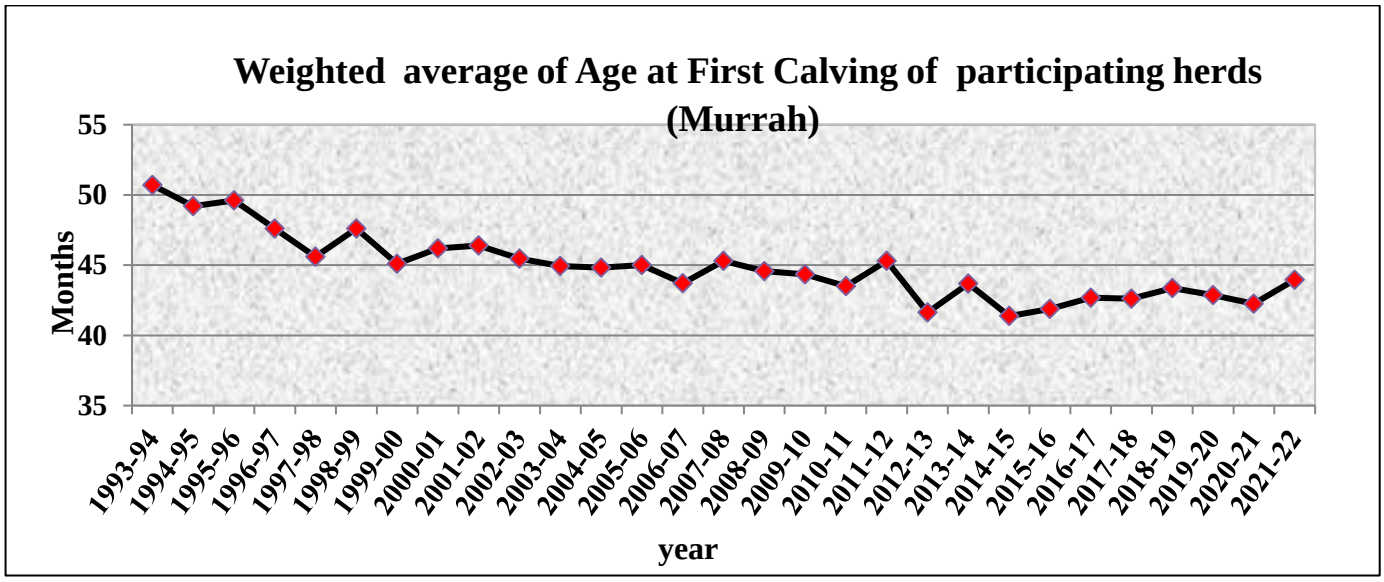
2006-07	1882±32 (170)	2235 (91)	2054 (111)	2261±44 (75)	2412±89 (27)	2139 (54)	1941±77 (27)	2079 (555)
2007-08	1891±34 (127)	2176±60 (67)	2094 (127)	2130±44 (80)	2525±109 (28)	--	1988±83 (24)	2097 (453)
2008-09	1926 (138)	2141±48 (88)	2256 (86)	2041±48 (76)	2209±106 (16)	1822 (57)	2078±89(22)	2076 (426)
2009-10	1995 (102)	2271±53 (67)	2222 (84)	1858±33 (84)	2570±92 (26)		2153±107 (20)	2110 (383)
2010-11	2247 (113)	2470±68 (81)	2015 (130)	2042±48 (66)	2136±63 (56)		2092±54 (22)	2172 (468)
2011-12	2374 (116)	2306±72 (87)	2192 (67)		2277±83 (49)	KVASU	LRS Mamnoor	2302 (319)
2012-13	2335±46 (110)	2528±55 (75)	2256 (83)		2242±108 (20)	1698±219 (11)	1560 (5)	2319 (304)
2013-14	2291±58 (98)	2509±67 (55)	2431 (82)	2808±43 (65)	2038±62 (47)	1728±158 (17)	1753 (13)	2367 (377)
2014-15	2355±48 (110)	2674±82 (46)	2224 (124)	2584±49 (62)	2136±52 (53)	**RC ER Patna**	1626 (11)	2338 (406)
2015-16	2336±33 (152)	2640±73 (45)	2523 (118)	2577±57 (78)	2302±65 (51)	1866±37 (18)	1843±31 (44)	2381 (506)
2016-17	2457 (133)	2561 (53)	2536 (87)	2967±64 (60)	2194±73 (55)	1736±21 (19)	2028±51 (43)	2449 (450)
2017-18	2424 (140)	2707 (54)	2387±44.8 (96)	3050±72.7 (69)	2129±56.25 (45)	1997±122.6 (12)	--	2511 (416)
2018-19	2567 (123)	2771 (62)	2319 (123)	3067±84.1 (66)	2205±68 (40)	1985±135 (16)	--	2547 (430)
2019-20	2648 (128)	2841 (73)	2184 (106)	3090±54.1 (60)	2307±51 (60)	2088±19.16 (20)		2558 (447)
2020-21	2730 (148)	2614 (50)	2199±41.48 (90)	2976±52.4 (65)	2224±37.11 (57)	1824±63.04 (31)		2516 (441)
2021-22	**2852 (153)**	**2672±57 (62)**	**2436±58.10 (85)**	**2793±49.91 (101)**	**2273±44.35 (59)**	**1944±78.37 (25)**	--	**2627 (485)**



Average Age at first calving at various participating herds

Year	CIRB	GADVASU	NDRI	LUVAS	IVRI	CCBF	NDUAT	Weighted average
1993-94	59.1±1.6 (48)	46.7 (24)	45.5 (44)	51.6	39.4±3.0 (7)	43.0		50.7 (123)
1994-95	55.3±1.3 (48)	47.5 (37)	46.0 (37)	51.3	38.3±1.7 (10)	48.0		49.2 (132)
1995-96	55.3±1.5 (22)	49.4 (43)	46.8 (27)	51.9 (26)	42.1±3.4 (14)	51.0		49.6 (132)
1996-97	47.6±1.6 (23)	49.4 (34)	46.8 (27)	47.3 (44)	42.1±3.4 (4)	51.0		47.6 (132)
1997-98	45.5±0.5 (49)	45.0 (45)	44.8 (34)	48.7 (28)	40.1±3.4 (6)	51.0		45.6 (162)
1998-99	50.0±0.01 (57)	47.0 (34)	46.2 (54)	47.3 (22)	43.4±2.3 (8)	54.0		47.6 (178)
1999-00	46.2±1.0 (54)	42.0 (54)	42.6 (29)	49.4 (15)	48.8±7.0 (6)	55.0 (10)		45.1 (168)
2000-01	46.2±1.2 (45)	44.4 (27)	42.4±0.7 (42)	50.6±2.0 (17)	42.4±2.8 (4)	60.5 (11)		46.2 (146)
2001-02	49.8±0.8 (51)	44.7±1.4 (32)	44.0±1.0 (34)	46.7±4.9 (14)	44.4±2.6 (11)	45.0 (12)		46.4 (154)
2002-03	47.83±0.5 (61)	40.2±1.1 (39)	44.0±1.5 (20)	47.0±41.2 (27)	41.2±2.9 (4)	50 (15)		45.47 (166)
2003-04	50.52±0.8 (77)	36.8±1.0 (23)	43.87 (62)	40.37±12.4 (40)	41.82±3.2 (8)	48 (11)		44.94 (221)
2004-05	48.18±0.8 (76)	41.7±1.7 (27)	43.4±0.9 (47)	40.0±3.6 (26)	42.5±1.7 (8)	46 (16)		44.83 (200)
2005-06	47.89±0.7 (76)	43.7±1.0 (35)	39.9±1.0 (36)	41.03±1.1 (31)	42.1 (10)	54 (18)		45.0 (206)
2006-07	46.9±1.06 (43)	43.3±1.2 (20)	41.4±1.5 (50)	41.8±1.8 (15)	41.9±2.3 (10)	45 (19)	47.2±0.4 (3)	43.7 (160)
2007-08	48.3±0.6 (77)	42.7±1.0 (30)	41.8±1.5 (42)	44.4±1.1 (30)	45.8±0.9 (28)		46.4±0.7 (10)	45.3 (217)
2008-09	47.7±0.97 (44)	42.5±0.7 (43)	40.7±1.8 (31)	48.4±1.1 (40)	39.7±1.8 (16)	54.0 (17)	43.8±0.97 (7)	44.56 (181)
2009-10	49.2±0.75 (51)	39.3±1.2 (29)	41.1±1.4 (25)	45.7±1.1 (27)	41.3±4.7 (15)		43.6±0.14 (14)	44.35 (161)
2010-11	49.9±1.0 (35)	39.1±1.4 (21)	41.26 (50)	45.8±1.8 (33)	39.6±1.2 (25)		43.7±0.44 (9)	43.49 (173)
2011-12	51.9 (37)	37.4 (22)	42.13 (24)		45.6±3.2 (20)			45.30 (103)
2012-13	44.5±1.4 (37)	38.9±3.5 (34)	41.6±5.7 (29)		39.7±2.8 (7)	KVASU	LRS Mamnoor	41.62 (107)
2013-14	45.6±0.8 (37)	42.3±1.6 (12)	41.8±3.8 (36)	46.6±1.4 (33)	38.2±2.2 (18)	59.2±7.4 (7)		43.68 (143)
2014-15	42.8±0.8 (61)	38.6±0.6 (23)	40.4±1.2 (35)	45.9±1.7 (17)	37.64±1.3 (18)	RC ER Patna		41.37 (154)
2015-16	44.96±1.2 (24)	40.2±0.7 (24)	39.3±1.3 (24)	41.7±1.28 (27)	40.2±2.6 (9)	--	54.0±1.19 (4)	41.88 (112)
2016-17	44.91±0.81 (38)	41.50 (27)	43.21 (29)	42.0±7.08 (34)	38.99±1.2 (19)	--	58.50±3.4 (3)	42.68 (150)
2017-18	43.58±0.67 (67)	41.28± 1.19 (25)	43.4 ±0.8 (44)	42.2±0.87 (27)	38.64±1.16 (14)	--	--	42.61 (177)
2018-19	45.76±0.80 (31)	40.74± 1.43 (39)	44.39 (41)	42.5±0.83 (21)	38.62±1.05 (16)	--	--	43.37 (151)
2019-20	43.62±0.80 (71)	40.42±1.05 (23)	44.52 (37)	43.5±0.49 (22)	39.24±2.11 (20)	--		42.87 (173)
2020-21	42.48±0.73 (71)	40.56±0.70 (34)	45.10 (26)	43.1±0.8 (27)	39.03±0.84 (23)	48.34±5.26 (3)		42.25 (184)

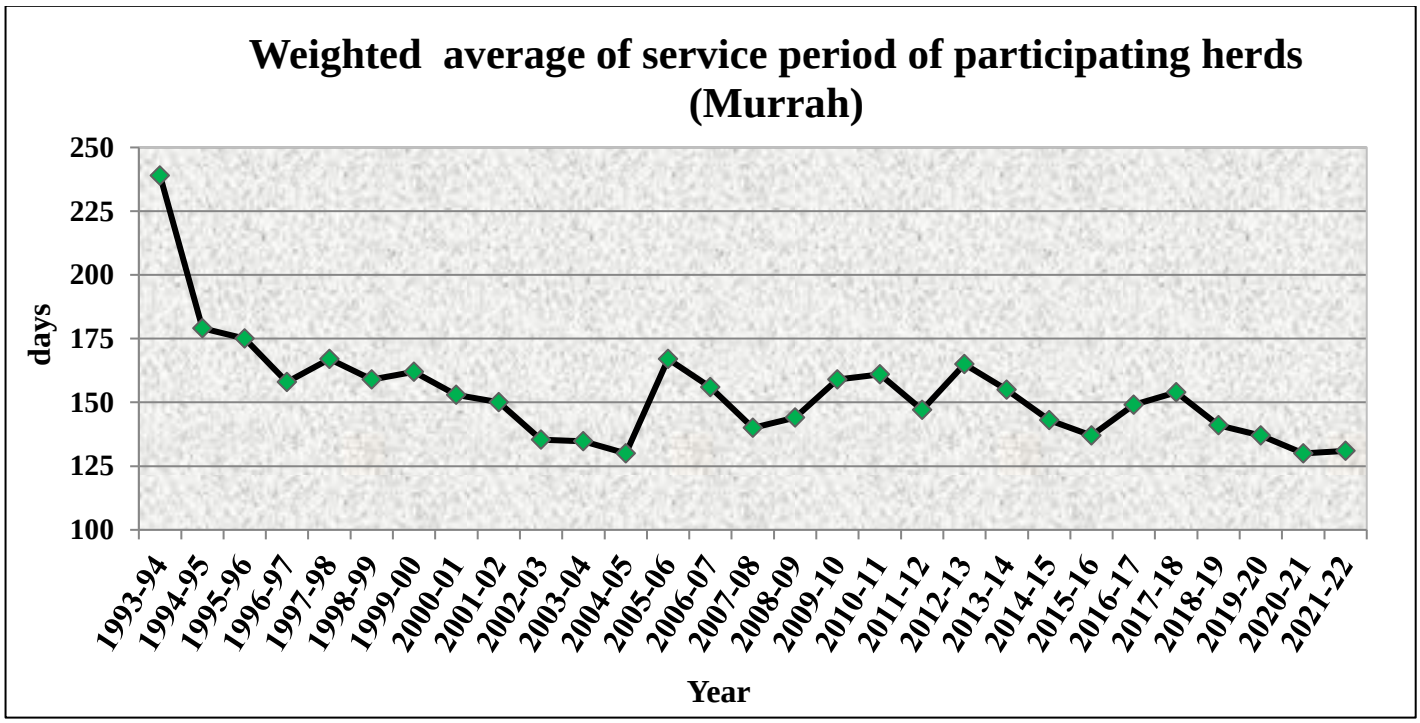
2021-22	**38.61±0.82 (67)**	**40.93±0.56 (53)**	**58.7 (35)**	**46.5±0.8 (33)**	**39.38±1.30 (23)**	**51.35±12.4 (3)**		**43.95 (214)**



Average Service period at various participating herds

Year	CIRB	GADVASU	NDRI	LUVAS	IVRI	CCBF	NDUAT	Wt. Avg.
1992-93	304±15(96)	207 (100)			120±33(8)	115		249(204)
1993-94	312±158(158)	228 (105)	148(97)	107.5	101±16(10)	165		239(370)
1994-95	202±15 (105)	206(96)	119(70)	163.1	77±5(9)	159		179(280)
1995-96	193±10 (149)	218 (105)	115(72)	135.0	100±12(12)	132		175(391)
1996-97	182±10 (149)	196(76)	114(66)	107.0	125±11(7)	204		158(361)
1997-98	175±14 (106)	248(94)	97(59)	107.7	83±06(11)	175		167(325)
1998-99	137±09 (121)	232(81)	118(63)	108.7	153±25(11)	186		159(323)
1999-00	138±09 (104)	213(59)	159(82)	148.3	190±28(16)	187		162(310)
2000-01	146±09 (151)	197 (81)	107±14 (53)	146.0	165±22 (17)	163		153 (370)
2001-02	146±11 (125)	202±14 (83)	123±9 (77)	147±14 (31)	134±25 (12)	126 (69)		150 (397)
2002-03	133±9 (126)	133±9 (95)	141±12 (59)	165±11 (47)	405±96 (5)	102 (76)		135.4 (408)
2003-04	151±10 (142)	160 (107)	131.65 (117)	87.6±8.4 (42)	108±15.5 (19)	48(11)		134.7 (432)
2004-05	111±7 (100)	140 (80)	126±10 (93)	96±6.0 (52)	150±16 (30)	160 (87)		130 (442)
2005-06	184±12 (112)	143 (65)	149±12 (68)	148±8.5 (128)	180±28 (54)	253 (32)		167 (459)
2006-07	183±11 (113)	166±15 (69)	131±10 (80)	165±12 (60)	139±15 (40)	151 (37)	99±12.7 (22)	156 (421)
2007-08	159±11 (113)	147±12 (53)	119±11 (84)	165±16 (57)	115±7.5 (62)		109±15.6 (22)	140 (391)
2008-09	171±12 (80)	142±9 (90)	131±22 (61)	139±13 (54)	152±12 (48)	191 (63)	91±17.5 (22)	144 (355)
2009-10	212±17 (77)	151±10 (76)	146±22 (62)	157±12 (68)	122±11 (59)		130±14.6 (17)	159 (359)
2010-11	186±14 (80)	154±12 (94)	145 (76)	155±12 (38)	175±16 (35)		140±3.9 (15)	161 (338)
2011-12	181 (80)	136 (65)	121 (87)		153±216 (29)	**KVASU** 153	**Mamnoor**	147 (261)
2012-13	174±12 (72)	151±13 (53)	124±27 (69)		213±26 (30)	298±42 (11)	172 (9)	165 (244)
2013-14	190±11 (86)	159±11 (67)	128±11 (73)	118±9 (39)	140±13 (39)	322±115 (6)	143±11 (14)	155 (324)

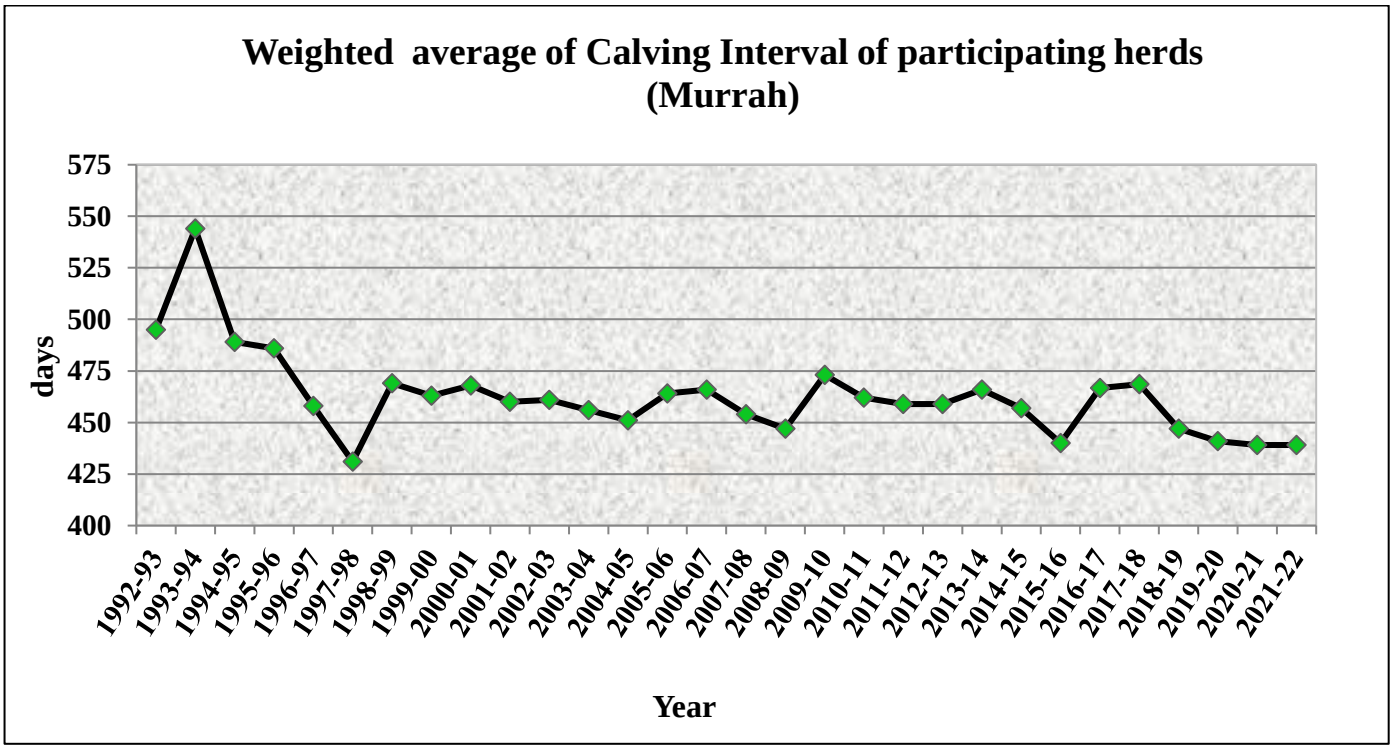
2014-15	168±8 (88)	160±18 (40)	135±19 (71)	117±11 (52)	124±12 (55)	**RC ER Patna**	141±17 (34)	143 (340)
2015-16	138±7 (111)	162±116 (26)	134±23 (92)	127±10 (58)	142±15 (51)	140±5 (12)	128±15 (27)	137 (377)
2016-17	148±9 (93)	184 (26)	132.20 (54)	129±9.6 (43)	145.9±9.5 (52)	183±6.25 (14)	183.9±18 (22)	149 (304)
2017-18	167±10 (101)	152±10 (41)	138±10 (49)	135±12 (46)	140.77±15 (35)	195±8.21 (12)	--	154 (272)
2018-19	136±6.98 (97)	136±10 (104)	139 (77)	150±10.7 (60)	169.22±16 (46)	157±9.28 (18)	--	141 (379)
2019-20	143±8.29 (90)	125±9.59 (82)	133 (60)	123±7.5 (64)	172.68±19 (47)	131±12.5 (20)	--	137 (363)
2020-21	126.95±7.29 (100)	138±12.11 (95)	140 (39)	127±9.2 (67)	137.24±11.09 (50)	103±10.85 (31)		130 (382)
2021-22	**130.82±8.36 (99)**	**147±13.12 (55)**	**143 (27)**	**118±12.11 (68)**	**140.78±11.24 (46)**	**95±15.64 (22)**		**131 (317)**



Average calving interval at various participating herds

Year	CIRB	GADVASU	NDRI	LUVAS	IVRI	CCBF	NDUAT	Weighted average
1992-93	489±16 (42)	510 (100)			404±22 (8)	498		495 (250)
1993-94	625±10 (161)	532 (106)	428 (98)		406±17 (3)	480		544 (368)
1994-95	527±10 (116)	512 (96)	428 (70)	459	377±08 (20)	523		489 (302)
1995-96	501±09 (152)	526 (105)	423 (72)	456 (40)	401±16 (7)	539		486 (376)
1996-97	473±09 (152)	510 (76)	423 (66)	408 (76)	424±23 (7)	510		458 (377)
1997-98	491±10 (118)	553 (94)	395 (60)	389 (55)	392±13 (11)	574		431 (338)
1998-99	455±10 (126)	553 (87)	424 (62)	417 (46)	438±15 (10)	522		469 (331)

1999-00	451±08 (120)	518 (63)	435 (52)	459±34 (49)	422±21 (11)	513		463 (295)
2000-01	454±09 (154)	511 (82)	408±21 (56)	479±33 (25)	411±13 (9)	491		468 (427)
2001-02	456±11 (135)	496±15 (84)	428±13 (43)	457±14 (31)	440±24 (12)	445 (69)		460 (374)
2002-03	440±9 (130)	463±13 (95)	406±16 (31)	472±11 (47)	585±69 (4)	501 (76)		461 (383)
2003-04	458±10 (151)	455 (93)	438 (17)	396.3±8.6 (42)	553±36 (29)	441 (10)		456 (342)
2004-05	426±7 (101)	478±13 (80)	428±20 (35)	402±6.2 (52)	481±28 (37)	480 (87)		451 (392)
2005-06	499±12 (112)	433±14.7 (60)	413±36 (54)	455±8.5 (126)	477 (37)	510 (32)		464 (421)
2006-07	495±11 (116)	437±12 (61)	419±11 (50)	473±12 (60)	452±21 (30)	502 (37)	444±4.6 (21)	466 (375)
2007-08	482±12 (117)	419±7 (58)	441±20 (55)	469±16 (57)	443±21 (43)		408±13 (21)	454 (351)
2008-09	469±12 (85)	438±8 (52)	424±14 (21)	444±13.4 (54)	452±11 (48)	503 (63)	402±17 (22)	447 (282)
2009-10	520±16 (77)	492±17 (72)	413±25 (30)	459±21.4 (68)	445±13 (63)		440±14 (17)	473 (327)
2010-11	492±14 (83)	457±105 (76)	442 (44)	462±12.2 (38)	449±16 (60)		426±6.7 (15)	462 (316)
2011-12	485 (81)	473 (85)	428 (56)		461±18 (39)	KVASU	**LRS Mamnoor**	459 (261)
2012-13	481±12 (73)	453±12 (59)	402±24 (55)		479±23 (31)	654±47 (6)	464±18 (22)	459 (246)
2013-14	495±12 (87)	471±11 (64)	424±24 (48)	423±29 (39)	471±14 (39)	599±48 (12)	398±5 (14)	466 (303)
2014-15	473±8 (88)	513±124 (41)	421±18 (40)	425±11 (52)	439±16 (44)	**RC ER Patna**	462±21 (34)	457 (299)
2015-16	449±7 (111)	458±17 (25)	430±23 (92)	434±11 (58)	447±16 (49)	425±1.4 (12)	426±16 (27)	440 (374)
2016-17	458±8.82 (93)	472 (26)	428.4±12 (27)	434±10.1 (43)	457.6±15 (40)	481±6.56 (12)	530±27.7 (22)	466.65 (263)
2017-18	478±9.87 (101)	459±11.8 (41)	432±11 (33)	444.59±12 .41 (46)	482.8±19 (35)	515.2±7. 12 (12)	--	468.57 (272)
2018-19	446±7.08 (97)	441±10.39 (104)	446 (77)	454±11.1 (60)	495.8±19 (36)	463±22.1 (18)	--	446.97 (370)
2019-20	451±8.49 (90)	436±10.52 (82)	444 (60)	430.5±7.9 (64)	448.7±13 (47)	426±40.6 (20)	--	441 (363)
2020-21	437±7.43 (100)	434±11.47 (95)	440 (39)	437±9.2 (67)	434±12 (50)	468±23.7 (31)		439 (382)
2021-22	**438±8.35 (99)**	**454±15.07 (55)**	**452 (27)**	**420±8.91 (68)**	**443±9.28 (46)**	**446±24.8 (22)**		**439 (317)**



Average Fat % during the years

Murrah	CIRB	GADVASU	NDRI	LUVAS	IVRI	NDUAT	SVVU	KVASU	Overall
2006-07	7.01 (130)	7.57 (82)	8.07 (99)	7.6 (37)	7.55 (71)	8.17 (27)			7.55 (446)
2007-08	7.03 (136)	7.31 (71)	7.92 (101)	7.70 (30)	7.99 (111)	8.02 (24)			7.58 (473)
2008-09	7.82 (1436)	7.80 (78)	7.98 (787)	7.3 (652)	8.19 (1244)	7.96			7.88 (4197)
2009-10	7.70 (85)	7.54 (79)	8.11 (1083)	6.8 (65)	7.97 (1008)	7.92 (20)			7.98 (2340)
2010-11	7.81 (1257)	8.17 (87)	8.03 (1107)	6.9 (783)	8.01 (1080)	7.99	7.18 (546)		7.69 (4860)
2011-12	7.66 (1257)	7.99 (88)	8.19 (750)		8.08 (924)		**LRS Mamnoor**		7.93 (3019)
2012-13	7.66 (1240)	8.27 (83)	8.15 (1010)		7.88 (872)		7.56 (196)	8.95 (12)	7.88 (3413)
2013-14	8.44 (1194)	8.59 (61)	7.90 (101)	6.80 (61)	7.89 (82)		8.20 (133)	7.80 (2423)	8.00 (4055)
2014-15	8.46 (1168)	8.33 (61)	8.30 (116)	7.20 (64)	7.87 (363)	**RC ER Patna**	8.15 (268)	--	8.26 (2040)
2015-16	--	7.97 (54)	8.28 (1648)	7.4 (78)	7.91 (996)	7.35 (84)	8.00 (380)	--	8.08 (3240)
2016-17	--	7.46 (49)	7.99 (1240)	7.3 (84)	7.95 (970)	--	8.05 (380)	--	7.95 (2723)
2017-18	--	7.32 (49)	7.89 (1150)	7.3 (81)	7.96 (994)	7.42 (12)	--	--	7.89 (2286)
2018-19	--	7.35 (68)	7.69 (106)	7.1 (76)	7.76 (292)	--	--	--	7.60 (542)
2019-20	--	7.34 (67)	7.54 (111)	7.1 (78)	7.35 (364)	--	--	--	7.35 (620)
2020-21	--	7.42 (64)	7.97 (79)	6.8 (72)	7.03 (395)	--			
2021-22	**7.92 (783)**	**7.64 (72)**	**8.19 (81)**	**6.97 (81)**	**7.14 (404)**	**7.48 (440)**			**7.61 (1861)**

Between breeds	Murrah	Nili Ravi	Bhadawari	Jaffarabadi	Pandharpuri	Surti	Godavari	Swamp	
2006-07	7.55 (446)	6.8 (118)	7.65 (34)	8.21 (34)	8.01 (25)	7.12 (34)	7.38 (47)	8.38 (12)	
2007-08	7.58 (473)	6.70 (122)	8.09 (106)	8.25 (29)	8.03 (15)	7.25 (34)	7.00 (47)	7.67 (21)	
2008-09	7.88 (4197)	6.9 (108)	8.09 (604)	8.61 (260)	8.04 (180)	7.33 (446)		7.73 (16)	
2009-10	7.98 (2340)	6.9 (146)	8.02 (375)	8.02 (446)	8.04 (257)	7.5 (301)	7.64 (44)	8.52 (20)	
2010-11	7.69 (4860)	6.8 (98)	8.20 (309)	8.01 (364)	8.03 (203)	8.06 (267)		8.91 (159)	
2011-12	7.93 (3019)	7.3 (81)	8.03 (195)	8.03 (27)	8.03 (630)	7.93 (229)		9.23 (115)	
2012-13	7.88 (3413)	7.62 (123)	8.16 (242)	8.24 (1632)	8.01 (545)	7.96 (240)		8.04 (155)	
2013-14	8.00 (4055)	8.20 (109)	8.65 (309)	8.06 (34)	7.85 (187)	7.89 (226)		10.16 (184)	
2014-15	8.265 (2040)	7.86 (115)	8.12 (340)	8.46 (386)	8.02 (289)	7.58 (364)		8.45 (62)	
2015-16	8.08 (3240)	7.38 (110)	8.26 (28)	8.38 (403)	8.09 (137)	7.43 (187)		8.35 (82)	
2016-17	7.95 (2723)	7.23 (111)	--	8.38 (42)	8.03 (120)	7.18 (21)	**Nili Ravi (GADVASU)**	8.62 (82)	
2017-18	7.89 (2286)	7.40 (108)	8.17 (294)	8.32 (495)	8.04 (83)	8.11 (248)	7.54 (33)	7.65 (80)	
2018-19	7.60 (542)	7.61 (113)	8.23 (187)	8.12 (781)	Center Closed	6.64 (288)	7.99 (33)	Center Closed	
2019-20	7.35 (620)	7.41 (N)	8.23 (309)	7.91 (773)	--	6.94 (270)	8.01 (34)	--	
2020-21		7.21 (115)	8.31 (462)	7.88 (721)	--	6.37 (186)	7.97 (37)	--	
2021-22	**7.61 (1861)**	**7.1 (102)**	**8.38 (339)**	**7.9 (58)**	**--**	**6.43 (171)**	**7.70 (28)**	**--**	

Total AI, Calving, PD, Conception and daughter's milk recording in Field Units

Murrah Breed	AI	Pregnancy	Total calving	Daughters born	Daughters Recorded
GADVASU, Ludhiana					
2001-02	493	184	-	-	3
2002-03	1908	723	229	135	20
2003-04	1858	629	472	245	26
2004-05	2435	726	466	215	14
2005-06	2822	967	699	333	55
2006-07	3313	1178	755	357	50
2007-08	4015	1438	870	368	82
2008-09	4147	1622	1149	491	85
2009-10	5415	1878	1140	538	155
2010-11	6846	2289	1274	603	183
2011-12	7298	2814	1800	853	172
2012-13	8517	3463	2497	1155	257
2013-14	8014	3380	2831	1303	208
2014-15	8316	3810	2958	1447	68
2015-16	6325	3054	3013	1383	1
2016-17	5289	2464	2236	1049	-
2017-18	6344	2579	1933	899	
2018-19	7779	3299	2468	1192	

2019-20	8690	4307	3235	1555	
2020-21	7991	4277	3878	1883	353
2021-22	8543	3815	3309	1565	381
Sub Total	**116358**	**48896**	**37212**	**17569**	**2133**
CIRB, Hisar					
2001-02	139	25	17	6	-
2002-03	540	236	14	3	-
2003-04	1001	356	147	73	-
2004-05	1298	566	243	133	-
2005-06	1999	1009	382	179	1
2006-07	2102	1139	756	352	5
2007-08	2132	1104	772	311	7
2008-09	2176	1086	716	358	27
2009-10	2803	1450	971	481	14
2010-11	3433	1743	1279	634	36
2011-12	3308	1756	732	348	47
2012-13	4204	2104	1159	574	54
2013-14	3962	1903	1230	552	50
2014-15	4129	2218	1093	528	70
2015-16	4434	2326	1718	818	78
2016-17	3807	2063	1661	797	139
2017-18	4093	2248	1593	799	126
2018-19	3977	2214	1710	830	144
2019-20	3957	2140	1754	801	123
2020-21	3480	1901	1430	663	139
2021-22	3167	1815	1434	746	172
Sub Total	**60141**	**31402**	**20811**	**9986**	**1232**
NDRI, Karnal					
2004-05	2223	993	710	333	34
2005-06	2224	994	875	400	45
2006-07	2193	976	918	440	65
2007-08	2594	1212	1140	517	109
2008-09	2529	1190	1086	503	138
2009-10	2739	1377	1159	569	211
2010-11	2747	1399	1225	560	183
2011-12	2995	1600	1260	605	133
2012-13	2905	1422	1159	569	138
2013-14	4419	2242	1225	560	119
2014-15	3941	2033	1860	905	83
2015-16	3905	1994	1648	768	87
2016-17	3916	1975	1524	722	85
2017-18	3241	1605	1397	640	91
2018-19	4315	1995	1030	456	--
2019-20	4571	1999	1532	647	--
2020-21	4874	1928	1559	640	
2021-22	5126	2267	1793	772	
Sub Total	**61457**	**29201**	**23100**	**10606**	**1521**
Grand Total	**237956**	**109499**	**81123**	**38161**	**4886**

* Conception of March 2021 will be added in July 2022

NDUAT Faizabad					
2006-07	482	57	222	103	
2007-08	372	122	143	61	
2008-09					
2009-10	1178	416	275	122	
2010-11	3695	427	328	164	
2011-12	Centre closed				
Total	**5727**	**1022**	**968**	**450**	
SVVU Venkataramangudam					
2010-11	282	67	21	8	Centre closed
Grand Total	**227129**	**102303**	**73739**	**34695**	**4240**

OTHER BREEDS

	AI	Pregnancy	Total Calving	Daughters born	Daughters Recorded
Jaffarabadi (JAU, Junagadh)					
2005-06	15				-
2006-07	966				-
2007-08	2169	1196(1907)	468	223	-
2008-09	2961	1141(2065)	944	455	-
2009-10	3070	1563(2676)	1429	694	-
2010-11	3457	1613(2651)	1333	666	-
2011-12	3738	1603(2918)	1538	729	-
2012-13	4067	1776(3627)	1684	810	-
2013-14	4121	1957(4021)	1688	801	-
2014-15	4781	2150(4271)	1564	731	1
2015-16	3375	1719(3691)	1892	867	15
2016-17	2971	1228(3041)	1256	537	74
2017-18	2462	1032(2436)	815	365	72
2018-19	2013	840(1971)	803	347	89
2019-20	1962	776(1894)	712	308	86
2020-21	2139	928(1273)	800	374	76
2021-22	1931	842(1910)	766	344	99
Total	**46198**	**20364(40352)**	**17692**	**8251**	**512**
Surti (LRS, Vallabhnagar)					
2001-02	2256	477	393	165	53
2002-03	1850	472	362	159	49
2003-04	1980	471	352	167	51
2004-05	1861	551	445	186	29
2005-06	1717	536	446	170	33
2006-07	1637	506	411	162	38
2007-08	1811	542	420	184	22
2008-09	1804	604	502	218	15
2009-10	1975	671	529	224	18
2010-11	2038	681	458	203	18
2011-12	2023	520	475	226	20
2012-13	1897	583	497	198	23
2013-14	1591	555	410	158	41
2014-15	1534	455	409	156	46
2015-16	1986	556	345	145	26

2016-17	1979	622	467	179	4
2017-18	1478	506	453	188	1
2018-19	1719	485	397	173	
2019-20	1538	539	409	183	
2020-21	1678	456	409	177	
2021-22	1480	540	402	185	
Total	**37832**	**11328**	**8991**	**3806**	**487**
Pandharpuri (MPKV, Kolhapur)					
2006-07	3969	1530	770	382	40
2007-08	5299	2001	1254	544	42
2008-09	9349	4402	1314	660	70
2009-10	25006	9622	4273	1902	80
2010-11	22602	10337	6093	2086	108
2011-12	21047	9263	5906	2619	105
2012-13	4081	2183	3520	1523	43
2013-14	3766	2202	2800	1301	152
2014-15	4329	2104	1165	514	61
2015-16	4607	2212	2039	949	-
2016-17	3642	1226	939	392	
2017-18	4286	1976	1438	635	Centre closed
Total	**111983**	**49058**	**31511**	**13507**	**701**
Godavari, SVVU, Venkataramanngudem					
2006-07	2167	530	271	124	
2007-08	1436	619	428	202	
2008-09					
2009-10	196	32	86	40	Centre closed
Total	**3799**	**1181**	**785**	**366**	
Grand Total	**199812**	**81931**	**58979**	**25930**	**1700**