

## Breeding management practices of dairy animals followed by farmers in Valsad district of Gujarat

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### ABSTRACT

A field survey was conducted to ascertain the breeding management practices followed by dairy animals owners in Valsad district of Gujarat and data were collected from randomly selected 240 respondents from two talukas through personal interview with the help of structured interview schedule. The present study revealed that all the respondents detected heat in their animals by observing the symptom of mucus discharge (67.90 %) and bred their animals by artificial insemination (98.93 %) during mid-heat after heat detection (70 %). About 76.27 % respondents bred their animals after 3-5 months of calving and 89.20 % respondents followed the pregnancy diagnosis by livestock inspector after three months of breeding. Majority (91.20 %) of the respondents followed treatment of anestrus/repeaters in their dairy herds and only 3.80 % of the respondents kept the breeding records of their dairy animals.

**Keywords:** Animals, Breeding, Dairy, Management, Pregnancy

As per the figures of 20<sup>th</sup> livestock census, India has 536.76 million total livestock population in which 193.46 and 109.85 million of cattle and buffalo population, respectively. The livestock population in Gujarat has 26.90 millions in which 9.60 million cattle and 10.50 million buffaloes. India is the highest milk producer country in the world with an estimated quantity of 187.75 million tones in the year 2018-19<sup>2</sup>. The contribution of Gujarat is about 14.49 million tons of milk to the total milk pool of India and per capita availability is 626 g/day<sup>1</sup>. Production performance of dairy animals depends generally on the management practices under which they are reared and these practices varies significantly throughout various agro-ecological regions due to many aspects. Thoughtful of dairy animals' management practices followed by

farmers in a region is needed to find the strengths and weaknesses of production systems and to formulate proper intervention policies<sup>4</sup>. Breeding management practices have much influence on milk production and ultimately the economy of the dairy animal owners. The dairy animal keepers must have a thorough understanding of the facts that milk production can be increased by adoption of improved breeding practices. Therefore, the present study was undertaken to ascertain the breeding practices of dairy animals followed by dairy animal keepers in tribal areas of Valsad district of Gujarat.

### MATERIALS AND METHODS

A field survey was conducted in Valsad district of South Gujarat during September, 2017 to January, 2018. Valsad district possess six talukas namely- Valsad, Dharampur, Vapi, Pardi, Umargaon and Kaporada. This district covers 3008 square kilometers and has 434 villages. There are 416 milk co-operative societies and 428 milk collection center in Valsad district. Out of six talukas in the district, two talukas were randomly selected. From each selected taluka, twelve villages having functional primary milk producer's co-operative societies

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were selected at random and ten dairy farmers from each village were randomly selected using a multi stage random sampling technique with the help of Talati cum Mantri/village dairy cooperatives which constituted a total of 240 respondents for the present study. In study areas Gir, Crossbred cow and Surti buffaloes were reared by the respondents. While choosing respondents due care was taken to ensure that they were evenly distributed and truly represented dairy animal management practices in the study areas. The selected dairy animal owners were single interviewed and the desired information was collected on breeding management practices with the help of interview schedule. The data were scrutinized and tabulated into frequency, percentage and chi-square test as per the methods prescribed by<sup>14</sup> to draw meaningful inferences.

## RESULTS AND DISCUSSION

The data regarding breeding practices followed by the dairy animal owners are presented in Table 1 and revealed that 100 per cent of the respondents practiced to detect the heat in dairy animals based on behavior symptoms of oestrus in the study areas. The finding was in similar line with the earlier results of authors<sup>5,10,11,12</sup>. It was revealed that 67.90 per cent respondents observed mucus discharge as the symptoms of oestrus while, 32.10 per cent respondents observed mucus discharge and bellowing as sole symptom of heat detection. Present findings were in contradictory with the earlier results of authors<sup>8,11,12&13</sup> who reported that about 84 to 100 per cent of the respondents were adopted mucus discharge and bellowing as sole symptom of heat detection in their study areas.

**Table 1. Breeding management practices followed by dairy farmers**

Sr. No.	Practices/Taluka	Dharpur (n=120)		Pardi (n=120)		Overall (n=240)		Chi square value
		n	%	n	%	n	%	
<b>1</b>	<b>Methods of heat detection</b>							
	Symptoms	120	100.00	120	100.00	240	100.00	NA
<b>2</b>	<b>Symptoms of heat detection</b>							
	Mucus discharge	76	63.30	87	72.5	163	67.90	2.31
	Mucus Discharge + Bellowing	44	36.70	33	27.5	77	32.10	
<b>3</b>	<b>Breeding of female animals</b>							
	Artificial Insemination	119	99.20	117	97.5	236	98.93	1.01
	Natural Service	01	0.80	03	2.5	04	1.67	
<b>4</b>	<b>Insemination or mating of female after heat detection</b>							
	Early heat	15	12.50	10	8.3	25	10.40	4.98
	Mid heat	88	73.30	80	66.7	167	70.00	
	Late heat	17	14.20	30	25.00	48	19.60	
<b>5</b>	<b>Breeding after calving</b>							
	2-3 months	07	5.80	24	20.00	31	12.90	10.90**
	3-5 months	100	83.30	83	69.20	183	76.20	
	After 5 months	13	10.80	13	10.80	26	10.80	
<b>6</b>	<b>Pregnancy diagnosis</b>							
	Yes	106	88.30	108	90.00	214	89.20	0.17
	No	14	11.70	12	10.00	26	10.80	
	Own judgment	14	11.70	12	10.00	26	10.80	16.68**
	Qualified veterinarian	09	07.50	33	27.50	42	17.50	
	Any other	97	80.80	75	62.50	172	71.70	
<b>7</b>	<b>Treatment of anestrus/repeaters</b>							
	Yes	113	94.20	106	88.3	219	91.20	2.56
	No	07	5.80	14	11.7	21	8.80	
<b>8</b>	<b>Kept breeding records</b>							
	Yes	06	5.00	03	2.50	09	3.80	1.04
	No	114	95.00	117	97.50	231	96.20	

n- Frequency, \*\* Significant at 1 per cent level (p<0.01)

Present study revealed that 98.33 per cent respondents used scientific method of artificial insemination (A.I.) for conceiving their dairy animals. While, 1.67 per cent respondents used natural service for conceiving their dairy animals. Present result was similar to the earlier results of authors<sup>3,5&8</sup>. However, the results are contrary to the findings of authors<sup>6 & 7</sup> who found that 89.17 and 61.88 per cent of the respondents adopted natural service for their animals in the study areas of Uttarakhand and Rajasthan, respectively. This may be due to lack of awareness and non-availability of good infrastructure facilities for the preservation and timely A. I. services in their study areas. Majority (70%) of the respondents were allowed their female animals for breeding through A.I. or N.S. at mid heat period followed by 19.6 and 10.4 per cent respondents allowed their animals at late and early heat period, respectively. The result was in accordance with the results of authors<sup>5&12</sup>. This is a good practice adopted by farmers to serve their cows/buffaloes in between 12–18 hrs from onset of estrus for better results of conception.

Data in Table 1 revealed that 12.90, 76.20 and 10.80 per cent respondents rebred their dairy animal after 2-3 months, 3-5 months and after 5 months of calving, respectively. Breeding after calving was highly significant ( $p < 0.01$ ) difference observed between the two talukas. This finding was supported with the earlier results of authors<sup>5&16</sup>. It might be due to awareness of the respondents to maintain calving interval in dairy animals which may leads to profitability of enterprise. Majority (89.20 %) of the respondents followed pregnancy diagnosis practice in their dairy animals, whereas 10.80 per cent of the respondents did not follow pregnancy diagnosis practice. This finding was supported by the earlier results of authors<sup>5,7,12&15</sup>. However, present results was contrary with the earlier findings of authors<sup>9&6</sup> who found that only 4.25 and 7.50 per cent of the respondents adopted pregnancy diagnosis practice in Churu district of Rajasthan and mid hills of Uttarakhand area, respectively. Further, present study indicated that, 71.70 per cent pregnancy diagnosis were done by either livestock inspectors or A.I. workers and 17.50 per cent by qualified

veterinarians after three months of pregnancy. However, 10.80 per cent of the respondents had done pregnancy diagnosis by their own judgements. Pregnancy diagnosis by qualified person was highly significant ( $p < 0.01$ ) difference observed between the two talukas. It might be due to different knowledge among respondents in two taluka. Present results are in accordance with the earlier results of authors<sup>5&16</sup> who observed that 12.08 and 15.00 per cent cases of pregnancy diagnosis were done by veterinarians, respectively in their study areas.

Majority (91.2%) of the respondents followed treatment of anestrus/repeaters in their dairy animals, whereas 8.80 per cent of the respondents did not follow this practice. Present result was in accordance with the earlier results of authors<sup>5</sup> and encouraging than the earlier results of author<sup>11</sup> found that 54 per cent respondents followed treatment of anestrus/repeaters animals in their study areas of Surat district. Only 3.80 per cent of the respondents kept the breeding records of their dairy animals, whereas 96.20 per cent of the respondents did not follow this practice. This might be due to fact that lack of awareness of respondent to maintain breeding records for future improvement in dairy animals. Present finding was lower than the earlier findings of author<sup>11</sup> found that 7.67 per cent of respondents were kept breeding records of their dairy animals.

## CONCLUSION

It can be concluded that all the respondents detected heat in their animals by observing the sign of mucus discharge (67.90 %) and majority of respondents bred their animals at mid heat by A.I. About 76.20 per cent of respondents bred their animals after 3-5 months of calving and only 17.50 per cent respondents followed the pregnancy diagnosis by veterinarian after three months of breeding of animals. Most of the respondents adopted to treatment of anestrus/repeaters dairy animals but only 3.80 per cent of the respondents kept the breeding records of their dairy animals. So, breeding management practices did not adopted by farmers to certain extent and needs to be improved by organizing training programmes and result demonstration on and off campus extension

activities of SAUs, KVK's and government agencies working in the study area.

## REFERENCES

1. Anonymous. 2020. 36<sup>th</sup> Survey report on estimates of major livestock products for the year 2018-2019 Gujarat state, Directorate of animal husbandry, Krishibhavan, Sector-10/A, Gandhinagar.
2. Anonymous. 2020. Basic Animal Husbandry Statistics-2019. Department of Animal Husbandry and Dairying. Ministry of Fisheries, Animal Husbandry and Dairying., Government of India, KrishiBhawan, New Delhi.
3. Chowdhry, N. R.; Patel, J. B. and Bhakat, M. 2006. An overview of feeding, breeding and housing practices of dairy animals under milk co- operative system in Banaskantha district of North Gujarat region. *Dairy Planner*, **5**: 8-10.
4. Gupta, D. C.; Suresh, A. and Mann, J. S. 2008. Management practices and productivity status of cattle and buffaloes in Rajasthan. *Indian J. Anim. Sci.*, **78**(7): 769-774.
5. Khadda, B. S.; Lata, K.; Singh, B. and Kumar, R. 2017. Study of buffalo husbandry practices in rural area of central Gujarat in India. *Buffalo Bulletin*, **36**(1): 75-87.
6. Kumar, S.; Mishra, B. K.; Yadav, J. S. and Kumar, A. 2011. Existing breeding and health management practices followed by dairy farmers in mid hills of Uttarakhand. *Indian J. Anim. Prod. Manag.*, **27**(1-2): 34-37.
7. Mahla, V.; Choudhary, V. K. and Saharan, J. S. 2015. Breeding management practices adopted by Kankrej cattle breed keepers in arid western Rajasthan, India. *Environment & Ecology*, **33**(2A):880-882.
8. Modi, R. J. and Patel, N. B. 2010. Breeding practices in dairy animals of rural area under milk shed of north Gujarat. *Indian J. Field Vet.*, **5**(4): 5-6.
9. Rathore, R. S.; Singh, R.; Kachwaha, R. N. and Kumar, R. 2010. Existing management practices followed by the cattle keepers in Churu district of Rajasthan. *Indian J. Anim. Sci.*, **80**(8): 798-805.
10. Sabapara, G. P. 2016. Breeding and milking management practices of dairy animals in coastal areas of Gujarat. *Indian J. Anim. Prod. Manag.*, **32**(3-4): 185-190.
11. Sabapara, G. P. and Fulsoundar, A. B. 2016. Existing feeding and breeding management practices for dairy animals in Surat district of Gujarat. *Indian J. Anim. Prod. Manag.*, **32**(1-2): 1-7.
12. Sabapara, G. P.; Desai, P. M.; Singh, R. R. and Kharadi, V. B. 2010. Breeding and health care management status of dairy animals in the tribal area of south Gujarat. *Indian J. Anim. Sci.*, **80** (11): 1148-51.
13. Sabapara, G. P.; Padheriya, Y. D. and Kharadi, V. B. 2016. A field survey of feeding and breeding practices at peri-urban buffalo farms of Surat city of Gujarat. *J. Anim. Res.*, **6**(5): 933-939.
14. Snedecor, G. W. and Cochran, W. G. 1994. Statistical methods. (9<sup>th</sup> Edn.). The Iowa State University Press, USA.
15. Viswkarma, R.; Singh, R.; Kushram, P.; Singh, S. K. and Sharma, S. 2018. Existing status of buffalo husbandry practices in Jabalpur. *The Pharma Innovation Journal*, **7**(2): 08-11.
16. Yadav, C. M.; Bhimawat, B. S. and Khan, P. M. 2009. Existing breeding and healthcare practices of cattle in tribals of Dungarpur district of Rajasthan. *Indian Res. J. Ext. Edu.*, **9**(1): 36-38.