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Study of breeding managerial practices for Mehsani buffalo in Banaskantha district of North Gujarat

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Abstract : A field study was undertaken in Banaskantha district of North Gujarat. Five talukas were randomly selected for the study. 46.00% farmers belonged to middle age category, (42.67 %) were illiterate with medium size (53.33%) family. Respondents were with marginal land holding (41.33%) and small herd size (38.67%). Mucous discharge and bellowing were the major heat symptoms (38.00%). Artificial insemination was 40.67% and 74.67% preferred to serve their buffaloes within 12-24 hours after heat detection either through private bull (98.88% of natural service) or artificial insemination by dairy A. I. workers (42.86% of artificial insemination). Adoption of practices like pregnancy diagnosis and record keeping for breeding were medium (56.67% and 50.67%, respectively). Majority of the farmers (75.00%) were conscious to breed their Mehsani buffaloes within 5 months after calving for maintaining optimum calving interval.

Key words : Illiterate, Marginal, Artificial insemination, Natural service, Pregnancy diagnosis

INTRODUCTION

Most of the information available on dairy animal management in rural area is based on assumptions, casual observations, experience and reports of some specialist and professional workers. This is not adequate to serve as the basis on which valid guidelines for introducing scientific managerial practices for improvements of dairy animals can be framed. Mehsani buffalo is the major contributor of milk production in the Banaskantha district and provides the major share of milk to dairy co-operative union. Breeding practices have much influence on milk production and ultimately the economy of the dairy farmers. Keeping this in view, the present study was planned to delineate the information on the Mehsani buffalo breeding managerial practices followed by farmers of Banaskantha district of North Gujarat.

RESEARCH METHODOLOGY

Five talukas were randomly selected for the study *viz.*, Palanpur, Deesa, Tharad, Kankrej and Dhanera. Three villages were selected from each taluka and in each village 10 respondents who reared dairy buffaloes were selected by using a multistage (3 stages) random sampling technique. The interview schedule developed for the study was used for collecting the information by personal interview from selected Mehsani buffalo owners. The study being of an exploratory nature, the qualitative data were quantified accordingly and tabulated. Chi-square test (Test of Independence) was being applied to determine the association of animal management practices with different categories (Sukhatme and Amble, 1978).

RESULTS AND DISCUSSION

The characteristic of cross section of respondents given in Table 1. The highest per cent of the Mehsani buffalo keepers (46.00 %) belonged to middle age category followed by young (29.33 %) and old (24.67 %) age categories in Banaskantha district. Looking to the level of education, majority of them

Table: 1: Characteristics of cross-section of respondents

Different parameters	Category	Total n = 150	Percentage	Chi - square test
Age	Young age (Up to 30 years)	44	29.33	NS
	Middle age (31 to 45 years)	69	46.00	
	Old age (above 45 years)	37	24.67	
Education	Illiterate	64	42.67	S. (1%)
	Primary (1-7th std.)	46	30.67	
	Secondary (8-12th std.)	32	21.33	
	College (above12th)	8	5.33	
Family size	Small size (up to 4 members)	21	14.00	NS
	Medium size (5-8 members)	80	53.33	
	Large size (more than 8 members)	49	32.67	
Land holding size	Landless (having no land)	12	8.00	NS
	Marginal farmer (?2.5 Acres)	62	41.33	
	Small farmer (2.5–5Acres)	56	37.33	
	Large farmer (>5 Acres)	20	13.33	
Herd size	Small (1-5 animals)	58	38.67	NS
	Medium (6-10 animals)	47	31.33	
	(Large (11-15 animals)	32	21.33	
	Very large (>15 animals)	13	8.67	

NS=Non-significant

were either illiterates (42.67%) or having primary (30.67 %) level of education, with medium (5-8 members) or large size family (> 8 members). Majority of respondents had poor land resources and were either marginal (41.33%) or small (38.67 %) farmers. 8.00 per cent landless respondents were also sustained by buffalo keeping in Banaskantha district. Proportion of respondents with small (1-5 animals) and medium (6-10 animals) size herd were higher (38.67 and 31.33 %, respectively) in the Banaskantha district.

The breeding practices followed by the buffalo owners of Banaskantha district are given in Table 2. Mehsani buffalo was the animal of preference in Banaskantha district as two - third of the respondents kept buffalo as sole dairy animals. One fifth of the respondents preferred to keep crossbred cow along with buffalo for better milk business. The results match with the different workers (Modi, 2003; Patel, 2004 and Soni, 2005) who observed same trend of preference of dairy animals in Sabarkantha, Patan and Mehsana districts of north Gujarat. It was found that 17.33, 14.00, 4.67, 38.00, 10.00 and 15.33 per cent respondents detected estrus in buffaloes by observing estrus symptoms like mucous discharge, bellowing, doka (swelling of teat prior milking), mucous discharge + bellowing, mucous discharge + doka, mucous discharge + bellowing + doka, respectively. This finding is comparable with findings of Patel *et al.* (2005), and Sargara (2007) who observed that majority of respondents of Patan and Kutch districts of Gujarat detected heat in their animals by mucus discharge and bellowing. It was found that 40.67% farmers preferred artificial insemination (A.I.). Data showed that 17.33% respondents

allowed their female animals for service within 12 hour's 46.67% between 12 to 18 hours, 28.00% between 18 to 24 hours and 8.00% more than 24 hours after heat detection. Also found that 30.00, 42.86, 18.56, and 4.28 per cent respondents followed A. I. by ICDP L. I., dairy A. I. workers, District Panchayat L.I. and others (private agency), respectively in Banaskantha district. Those respondents (59.33 %) preferred natural service for breeding their buffalo, mainly utilized private bull (98.88 %). Trend for pregnancy diagnosis and record keeping was observed in 56.67 and 50.67 per cent of the respondents respectively. The 9.33% of the respondents kept their own breeding trevis. Data revealed that 48.00, 26.67 and 25.33 per cent respondents followed breeding of their dairy buffaloes after 2-3 months, 3-5 months and after 5 months of calving, respectively.

Conclusion:

Majority of the Mehsani buffalo keepers were small and marginal farmers and landless labours in Banaskantha district. Medium size family (5-8 members) keeping buffalo strength up to 10 animals in intensive or semi intensive system having illiteracy or poor education were the feature of buffalo husbandry in Banaskantha district.

Farmers of the Banaskantha had better awareness about breeding practices in the Mehsani buffaloes. Mucous discharge and bellowing were the signs utilized for heat detection in buffaloes. Though the adoption of natural service by private bull was more, notable proportions of the farmers have adopted A. I. for their buffaloes through the livestock

Table 2 : Breeding practices followed by the Mehsani buffalo owners

Different parameters	Category	Total (n = 150)	Percentage	Chi - square test
Species of milch animals	Buffalo	91	66.00	S. (5%)
	Indigenous cattle + Buffalo	20	13.33	
	Crossbred cattle + Buffalo	31	20.67	
Heat detection symptoms	Mucous discharge	26	17.33	N. S.
	Bellowing	21	14.00	
	Doka	7	4.67	
	Mucous discharge + Bellowing	57	38.00	
	Mucous discharge + Doka	15	10.00	
	Mucous discharge + Bellowing + Doka	23	15.33	
Service of buffaloes	Natural	80	53.33	S. (1%)
	A.I.	61	40.67	
	Natural / A.I.	9	6.00	
Service provided after heat detection	Within 12 hours	26	17.33	
	Between 12-18 hours	70	46.67	
	Between 18-24 hours	42	28.00	N. S.
	> 24 hours	12	8.00	
	ICDP L. I.	n = 70		
		21	30.00	
Preference of A. I. workers	Dairy A. I. workers	30	42.86	N. S.
	District panchayat L. I.	13	18.56	
	Others	6	4.28	
Provision of natural service	Gram panchayat bull	n = 89		N. S.
		1	1.12	
	Private bull	88	98.88	
Pregnancy diagnosis practice followed	Yes	85	56.67	S. (1%)
	No	65	43.33	
Record keeping	Yes	76	50.67	S. (1%)
	No	74	49.33	
Keeping of breeding trevis	Yes	14	9.33	N. S.
	No	136	90.67	
Breeding of buffalo after calving	2-3 months	72	48.00	N. S.
	3-5 months	40	26.67	
	After 5 months	38	25.33	

Note: N. S. Indicate chi square statistical is not significant
S. (1%) Indicate chi square statistical significant at 1% level
S. (5%) Indicate chi square statistical significant at 5% level

inspectors. Adoption of pregnancy diagnosis and record keeping was medium in the district. Majority of the farmers bred their buffalo within 5 months of calving and maintain ideal calving interval.

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