



Constraints limiting the livestock productivity of tribal community in high rain coastal region of India

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ABSTRACT : A field survey was undertaken in west coastal farming area, Chikhli taluka of Navsai district of south Gujarat to study the constraints faced by tribal dairy farmers. 15 Villages were selected from the said taluka through two stage random sampling. Maximum farmers (52.0 %) of this area were less educated (less than class 7) belonged to old age (69.33% above 40 years) category having medium size family (6-10 members). Majority of them have marginal land holding (88.66%) keeping herd size of less than six animals. Majority of the respondents in survey area were deprived and the major constraints observed with respect to housing, feeding, breeding and milking management practices were lack of own capital (31.18%), high cost of feed (27.71%), incidence of repeat breeding (21.90%) and non-remunerative price of milk (38.2%). The poor economic status, low production of animals observed in this finding caused development failure of the farmers of the area. Furthermore, the common constraints like incidence of mastitis in crossbred cow (24.09%), use of unbalanced ration (22.22%), belief that rectal palpation is harmful (6.19%), inadequate knowledge of diseases (19.55%) and their management deteriorates the condition. The constraints observed in this study serve as preface for systematic dairy development and intervention strategies to raise the economic condition of tribal farmers especially the young generation who are shifting to urban area for jobs.

KEY WORDS : Mangemental practices, Dairy animals, Livestock, Constraints

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INTRODUCTION

Livestock sector contributes significantly to the agrarian economy of India in general and livelihood of poor people of high rain fall coastal agro-ecosystem in particular, because of inherent risks in crop farming due to high salinity and heavy rain fall. Adoption of scientific rearing by tribal peoples is one of the important aspects to improve the quality of their life, however various constraints hamper its adoption. Hence, this work was carried out to identify the constraints faced by tribal dairy owners in Chikhli taluka of Navsari district of South Gujarat with respect to low productivity of animals.

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MATERIAL AND METHODS

A field study was conducted in June 2012 to document the constraints experienced by the tribal dairy farmers of study area. This taluka is spread over 89 villages and majority of its population is tribal. Chikhli is the smallest city of region of south Gujarat with semi-dry to low humid climate with heavy rainfall (1793 mm). Out of 89 villages in the taluka, 15 villages having functional primary milk producers' co-operative society were selected randomly viz., Panikharak, Sarkhai, Kanbhai, Khergam, Fadwel, Suthwad, Saraiya, Babhanvara, Gheg, Samroli, Pipalgabhan, Talawchara, Sadarwel, Ranbherikund and Vanzna. Ten dairy animal owners from each village were randomly selected using a two stage random sampling technique with the help of Talati cum Mantri (Tehsildar), which represent a total of 150 respondents. Selected respondents were interviewed regarding the major constraints in managemental practices of dairy animals using well structured pre-tested schedule developed for study. Number of respondents indicating the same constraints was counted in

frequency and then converted into percentage. The data thus collected were tabulated, statistically analyzed to interpret the results.

RESULTS AND DISCUSSION

The characteristics of cross section of respondents are given in Table 1. The highest percentage of dairy animal keepers belonged to aged group (above 40 years) followed by middle age (20-40 years) group in area appraised. Looking at the level of education, majority of them were educated up to class seven followed by matriculation level. Medium size family was highest which might be due to lack of awareness of family planning. The land holding showed that majority of the respondents had poor agricultural resources and were either marginal or small farmers. Further it was also observed that the proportion of dairy farmers with small and medium herd size were higher in study area. This was due to lack of awareness of importance of

dairy animals as business enterprise and they were utilizing it as part time activity. Majority of peasants were keeping crossbred cow followed by buffalo with crossbred cattle side by side. Respondents were very positive towards crossbreds due to their interest in high level of production and government aids to the tribal area.

The major constraints observed related to housing were lack of own capital followed by lack of credit facility, high construction cost, high interest rate and lack of inadequate space as shown in Table 2. This may be due to the fact that most of the respondents in study area were poor, belonged to tribal class and they were inadequate in resources to provide adequate housing to their animals. Similar finding were also reflected in study of Patel *et al.* (2013), Sabapara *et al.* (2012), Gami *et al.* (2012), Mohi and Bhatti (2006) and Kumar *et al.* (2006) who observed lack of own capital as the major constraints for housing.

Table 1: Characteristics of cross-section respondents

		(n=150)	
Parameters	Category	Total	Percentage
Age	Young (0-20 years)	00.00	00.00
	Middle age (20-40 years)	46.00	30.66
	Old age (above 40 years)	104.00	69.33
Education	Up to class 7	78.00	52.00
	8-10 class	53.00	35.33
	11-12 class	11.00	07.33
	Above 12 class	08.00	05.33
Family size	1-5 members	65.00	43.33
	6-10 members	73.00	48.66
	More than 10 members	12.00	08.00
Land holding	Marginal farmers (≤ 2.5 acre)	133.00	88.66
	Small farmers (2.5-5 acre)	10.00	06.66
	Large farmers (>5 acre)	07.00	04.66
Herd size	Small (<6 animals)	102.00	68.00
	Medium (6-10 animals)	37.00	24.66
	Large (>10 animals)	11.00	07.30
Types of animals	Indigenous cow	04.00	02.66
	Cross bred cow	73.00	48.66
	Buffalo	21.00	14.00
	Mixed type	52.00	34.66

Table 2 : Constraints of housing

Constraints	Score earned	% Score	Main constraints rank
Lack of own capital	701	31.18	I
Lack of credit facility	533	23.70	II
High interest rate	387	17.21	IV
Lack of adequate space	204	09.07	V
High construction cost	423	18.81	III
Total score = 2248			

The major constraints that farmers faced here were related to feeding with high cost of feed followed by lack of knowledge of balancing ration, non-availability of green fodder round the year, lack of awareness about treatment of poor quality straw to improve its nutritive value, lack of knowledge about silage preparation and lack of availability of fodder crop seed (Table 3). The results obtained in the present finding are in agreement with that of Singh *et al.* (2004), Kumar *et al.* (2006), Mohi and Bhatti (2006), Prakash *et al.* (2011), Sabapara (2009), Sabapara *et al.* (2012) and Patel *et al.* (2013) who also observed high feed cost as the major constraints. Mohapatra *et al.* (2012) too have observed that high cost of concentrate (96.67%) and lack of facilities for growing green fodder (62.5%) were the major constraints faced by the tribal dairy farmers of Mayurbhanj district of Odisha. Lack of knowledge about silage preparation was reported by Gami *et al.* (2012), lack of knowledge of balancing ration was indicated by Dhaka *et al.* (2011) in different areas of India. Majority of problems were due to underprivileged land holding and financial condition of the dairy owners. Unavailability of grasses and pasture land with marginal holding could not allow producing sufficient surplus green fodder and feeds.

Breeding and genetic improvement of animal is one of the important pillars in animal production system. Regular calving with reduced calving interval results in economical and sustainable production. In present study, the major constraints observed were repeat breeding, low conception through A.I., lack of knowledge of heat detection, lack of availability of

insemination in time, lack of improved bulls in villages, preference of natural service in buffalo and belief that P.D. is harmful for pregnant animals as shown in Table 4. The results are in agreement with that of Gami *et al.* (2012) and Sabapara *et al.* (2012) who also reported repeat breeding as the major constraint and detected repeat breeding 35.33% and 81 per cent, respectively in different areas of Gujarat. The results regarding low conception rate through A.I. were similar to Kumar *et al.* (2006) and Mohi and Bhatti (2006). The incidence of repeat breeding is very high in dairy animals especially in crossbred cow and buffaloes which leads to increased calving interval in the animals. The summer stress is one of the important reasons for increased calving interval in buffaloes due to silent heat problem.

Milking is removal of mammary gland secretion from lumen to outside. It requires proficiency and speed. The required standard time for milk removal is 5-7 minutes. Farmers of the vicinity faced constraints as listed in Table 5 as non-remunerative price of milk, lack of preservation facilities for milk, lack of knowledge in clean milk production and high cost of utensils. Price of milk is the main factor which is the key to resource poor farmers. Marketing of milk was not a problem in area as the co-operative system of milk marketing is developing in tribal area. Peoples of the area were also sensitized by scientific community by regular visit and different extension activities like Krishi Mahotsav in the state. The finding is very similar to Kumar *et al.* (2006) and Sabapara *et al.* (2012) who also observed non remunerative price of milk as major constraints in their respective studies. Lack of knowledge of

Table 3 : Constraints of feeding

Constraints	Score earned	% Score	Main constraints rank
High cost of feed	873	27.71	I
Lack of knowledge of balancing ration	700	22.22	II
Lack of availability of fodder crop seed	258	08.19	VI
Non-availability of green fodder round the year	623	19.77	III
Lack of awareness about treatment of poor quality straw to improve its nutritive value	410	13.01	IV
Lack of knowledge about silage preparation	286	09.07	V
Total score = 3150			

Table 4 : Constraints of breeding

Constraints	Score earned	% Score	Main constraints rank
Repeat breeding in crossbred	919	21.90	I
Low conception through A.I.	747	17.80	IV
Lack of knowledge of heat detection	760	18.11	III
Lack of availability of insemination in time	835	19.90	II
Belief that P.D. is harmful for pregnant animals	260	06.19	VII
Lack of improved bulls in villages	405	09.65	V
Preference of natural service in buffalo	269	06.41	VI
Total score = 4195			

Table 5 : Constraints of milking

Constraints	Score earned	% Score	Main constraints rank
Non remunerative price of milk	573	38.2	I
High cost of utensils	156	10.4	IV
Lack of preservation facilities for milk	456	30.4	II
Lack of knowledge in clean milk production	315	21.0	III
Total score = 1500			

Table 6 : Constraints of health care

Constraints	Score earned	% Score	Main constraints rank
Problems of mastitis in cross bred cow	759	24.09	I
High cost of veterinary medicine	681	21.61	II
Non availability of vaccine in time	600	19.04	IV
Inadequate knowledge of disease and their control	616	19.55	III
Distant location of veterinary hospital	246	07.80	VI
Veterinary doctors do not visit villages frequently	248	07.87	V
Total score = 3150			

clean milk production was also emphasized by Kumar *et al.* (2006). Clean milk production is very important, since high standard plate count of milk ($>10^5$ cfu/ml) makes it unfit for consumption and deteriorates the market values. During cross questioning the farmers, it was observed that majority of respondents were knowing the importance of clean milk production still they are not giving proper emphasis on it. The farmers adopting such clean milking practices should be additionally appreciated with wages and reward for further acceptance.

Health of the animal is most desirable features of quality production from dairy animals. The constraints faced by respondents related to health care were high cost of veterinary drugs followed by problems of mastitis in crossbred cow, inadequate knowledge of diseases and their control, Non-availability of vaccine in time, veterinary doctor not visit village frequently and distant location of veterinary hospital as presented in the Table 6. High cost of veterinary medicine is common problem for the poor dairy farmers all over India. Incidence of mastitis was very common in high producer crossbred especially in later stage of lactation and parity. Cows use to sit just after milking, is critical time for entry of infection to the udder. During discussion with farmers it came in to perception that the farmers who are not allowing their cow to sit just after milking were less prone to the disease. The result obtained in the study was in accord with Kumar *et al.* (2006), Prjapati (2012), Sabapara *et al.* (2012) and Patel *et al.* (2013) for high cost of medicine and for mastitis as common problem in crossbred cow with Singh *et al.* (2004) and for inadequate knowledge of diseases and their control with that of Mohi and Bhatti (2006), Singh and Fulzeel (2006) and Sabapara *et al.* (2012). Quddus (2012) emphasized the importance of poor

knowledge about health care, proper feeding and ration balancing as major constraints of farmers in survey area. It needs proper training and awareness in people with the help of expert extension persons and audio-visual aids so that health of animals are controlled in such a way that we could achieve quality production with dairy animals at optimum rate.

Summary :

A study was conducted to recognize the limiting factors that hinder the livestock owners of tribal community to adopt scientific management practices in Chikhli taluka of coastal district of South Gujarat. Majority of the respondents in survey area were underprivileged and major constraints observed with respect to housing, feeding, breeding and milking management practices, lack of own capital, high cost of feed, incidence of repeat breeding and non-remunerative price of milk. The poor economic status, low production of animals and other managerial constraints observed in this finding caused their development failure of the farmers of the area. Moreover, the common constraints like lack of knowledge of balancing ration, belief that rectal palpation is harmful, inadequate knowledge of diseases and their management were the common road block. Extension work should be strengthened so that dairy owners are encouraged to adopt the scientific management system.

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