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Analysis of potentials and problems of dairy farming in North Bihar

KESHAVA[1] and M K MANDAPE[2]

Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh 243 122 India

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ABSTRACT

The study was carried out to analyse problems in and prospects of dairy farming in Muzaffarpur District of north Bihar. Farmers (100) belonging to different landholding categories and rearing at least 1 milch animal were randomly selected as respondents. The result of the study revealed that dairy farming in the area was characterized by inadequate herd size, low milk productivity and poor feeding practices. The major problems faced by farmers in dairy farming were proneness of animals to diseases, costly cattle feeds and unavailability of veterinary facilities and regular milk market.

Key words: Dairy farming,Potentials of dairy farming, Problems of dairy farming

Though India is the largest milk producer in the world, its position in terms of per capita milk availability is woefully low. Considering the per capita milk requirement recommended by the Indian Council of Medical Research (220 g / day), only 6 States—Punjab, Haryana, Himachal Pradesh, Rajasthan, Gujarat and Madhya Pradesh, and one Union Territory—Andaman & Nicobar Islands, have a per capita milk availability above this level (Anonymous 1996a). Region-wise, only the northern region has a per capita milk availability of 308 g / day that exceeds the above requirement. Eastern region has lowest availability (109 g / day) of milk (Anonymous 1996b). Besides, milk productivity in India remains low, averaging 1.5 litters / day (Aneja and Puri 1996). Thus, milk production can be increased many folds in major parts of our country, particularly in eastern region.

Bihar, one of the States of eastern region, is ranked third in cattle population, according to Livestock Census 1987, but its milk production is eleventh and milk productivity is thirteenth. Major milk producing districts are in the northern part of the State (Anonymous 1996c). This study has been carried out to analyse the potentials and problems of dairy farming in North Bihar.

MATERIALS AND METHODS

The study was conducted during 1996-98 in 4 villages that were not covered by milk producers' co-operative society. Respondents of the study were 100 farmers each of whom rearing at least 1 milch animal. Landholding size was taken as basis for selection of respondents as number of animals possessed by rural farm families generally varies according to it. A proportionate random sample of 68 marginal farmers possessing less than 1ha of land, 24 small farmers possessing 1 to less than 2 ha of land and 8 medium-large farmers

Table 1. Mean values and significance of differences in operational landholding, herd size and milk productivity on different categories of farms

Categories of farms	Average operational landholding (ha)	Average herd size (cattle equivalent)	Milk productivity per unit of cattle equivalent (litters/day)
Marginal	0.48(0.02)a	3.18(0.12)a	1.475(0.54)a
Small	1.42(0.03)b	3.82(0.21)b	1.347(0.88)a
Medium-large	3.00(0.49)c	2.18(0.26)c	1.505(1.25)a
'F' value	11.80**	7.66**	0.74*
Pooled	0.86(0.06)	3.25(0.10)	1.448(0.44)

Figures in parentheses indicate standard error; means across the rows in a particular column bearing different superscripts are significantly different; * nonsignificant; **significant at 1% level of significance.

Present address: [1]Research Associate, Agriculture Management Centre, Indian Institute of Management, Prabandh Nagar, Off Sitapur Road, Lucknow, Utter Pradesh 226 013.

[2]Senior Scientist.

Table 2. Average quantities of different feeds fed to per unit of cattle equivalent and significance of differences in their mean values

Categories of farms	Average quantity (kg/day)		
	Green fodder	Dry fodder	Concentrates
Marginal	5.396(0.37)[a]	9.022(0.30)[a]	0.697(0.04)[a]
Small	5.016(0.30)[a]	8.437(0.42)[a]	0.776(0.07)[a]
Medium-large	5.590(0.98)[a]	9.123(1.02)[a]	0.841(0.14)[a]
'F' value	1.58*	0.52*	0.88*
Pooled	5.325(0.36)	8.902(0.24)	0.724(0.03)

Figures in parentheses indicate standard error; means across the rows in a particular column bearing similar superscripts are nonsignificantly different; *nonsignificant.

possessing 2 ha or more land was drawn. Medium and large categories of farmers were merged as percentage of large farmers possessing 4 ha or more land was only 1 in the study area.

In all, sampled farmers possessed 108 indigenous cows, 23 crossbred cows and 267 buffaloes including young and adult both. For the purpose of analysis, the actual number of animals was converted into cattle equivalent scores (Lalwani 1998).

RESULTS AND DISCUSSION

Herd size was largest (3.82 cattle equivalents) on small farms and lowest (2.18 cattle equivalents) on medium-large farms (Table 1). It was the common trend in the study area that medium-large farmers reared animals for status symbol and fulfilment of family milk requirement, whereas, farmers having smaller holdings kept them for economic purpose as well. The herd size in the study area seems to be very small in light of the results of the study conducted by Kahlon and Agrawal (1967) who recommended 3, 10 and 12 buffaloes for small, medium and large farms, respectively, as optimum combination of crop and milk production.

Overall milk productivity on the sampled farms was 1.448 litters / day, which was below the national milk productivity of 1.5 litters (Aneja and Puri 1996). Whereas, milk yield / day an animal for a viable rural dairy farm of 2 animals unit should be 7 litters for buffaloes and 8 litters for crossbred cows averaging 7.5 litres (Rao 1996). Besides, though all the 3 categories of farms differed significantly with respect to operational landholding size and herd size, differences in milk productivity were statistically nonsignificant. This shows the poor maintenance of dairy animals in the study area, irrespective of the categories of farms.

Average quantities of different feeds fed per unit of cattle equivalent on different categories of farms (Table 2) indicate statistically nonsignificant differences in average quantities of all the 3 types of feeds fed to animals. The overall average quantities of green fodder, dry fodder and concentrate fed to per unit of cattle equivalent on the sampled farms were 5.325 kg, 8.902 kg and 0.724 kg per day, respectively. Whereas, Rao (1996) suggested 20 kg and 10 kg of green fodder, 6 kg and 8 kg of dry fodder as well as 3 kg and 1 kg of concentrate per day for each buffalo in milk and dry buffalo, respectively. The quantities suggested by him for crossbred cow were 25 kg and 15 kg of green fodder, 3 kg and 5 kg of dry fodder as well as 3 kg and 1 kg of concentrate per day for each cow in milk and dry cow, respectively. Thus, an average of 17.5 kg of green fodder, 5.5 kg of dry fodder and 2 kg of concentrate should be fed to each animal. It shows the poor feeding practices in the study area.

Farmers were enquired about ways of fulfilment of green fodder requirements of their livestock and data pertaining to

Table 3. Ways of fulfilment of green fodder requirements of animals

Fulfilment of green fodder requirements	Frequencies of farmers			
	Marginal (N=68)	Small (N=24)	Medium-large (N=8)	Pooled (N=100)
Production on own land	12(17.65)	16(66.67)	7(87.50)	35(35.00)
Grazing in pasture	25(36.76)	6(25.00)	—	31(31.00)
Cut- and carry- method	31(45.59)	2(8.33)	1(12.50)	34(34.00)

Figures in parentheses indicate percentages.

Table 4. Reasons for not growing green fodder on different categories of farms

Reasons	Frequencies of farmers			
	Marginal (N=68)	Small (N=24)	Medium-large (N=8)	Pooled (N=100)
Small holding	49(72.06)	3(12.50)	—	52(52.00)
Unavailability of suitable varieties of fodder crops	16(23.53)	3(12.50)	—	19(19.00)
Lack of irrigation facilities	27(39.70)	6(25.00)	1(12.50)	34(34.00)

Figures in parentheses indicate percentages.

Table 5. Constraints faced by farmers in dairy farming

Constraints	Farmers facing constraints	
	Frequency	Percentage
Unavailability of veterinary facilities in time	87	87.00
Disease prone animals	64	64.00
Costly cattle feeds	55	55.00
Unavailability of regular milk market	51	51.00
Intensive cropping	33	33.00

this are presented in Table 3. Only 35 % of the sampled farmers produced green fodder on their own land. Besides, farmers used to graze their animals in pasture, on roadside or in the wasteland where cultivation is not done and bring grass from field (cut- and carry- method) to feed it to their livestock. Mearly 34 % of the respondents used cut- and carry- method, whereas, grazing was practised by 31 % of the respondents. However, because of input intensive agriculture, multiple cropping and reduction in area of pastureland, farmers feel it difficult to graze animals.

Further, respondents were enquired about reasons for not growing green fodder on their farms (Table 4). Small land-holding was one of the reasons revealed by 52 % of the respondents, more so by marginal farmers (72.06 %). Second reason reported by almost one-third of the respondents was lack of irrigation facilities. Unavailability of suitable varieties of fodder crops was third reason revealed by 19 % of the respondents.

Distribution of respondents as per their revelation of constraints faced by them in dairy farming is given in Table 5. The problem revealed by most of the respondents (87 %) was unavailability of veterinary facilities in time followed by disease prone animals, costly cattle feeds, and unavailability of regular milk market reported by 64, 55, and 51 % respondents, respectively. Intensive cropping was identified as problem for dairy farming by only 33 % of respondents. The problem revealed by most of the respondents indicates poor infrastructure facilities in animal husbandry and inadequate veterinary aids and services in the study area. Shah and Singh (1992) reported almost similar constraints in rearing crossbred cows.

Thus, on the basis of above discussion, it can be concluded that there is tremendous scope of increasing milk production and productivity through maintaining proper herd size, better feeding practices and providing farmers with better veterinary aids and disease resistant animals. Encouraging farmers having medium-large holdings to go for commercial green fodder production can fulfil requirements of green fodder in the area. Milk producers' co-operative society should expand its area of functioning so that farmers of the area will have access to better veterinary aids and regular milk market.

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