

Farmers' Knowledge on Feeding Practices of Dairy Animals in Jhansi District

B. S. Meena¹, A. K. Singh², Jitendra Chauhan³ and Gopal Sankhala⁴

1 and 4, Scientists (Agril. Ext.), NDRI, Karnal, 2. ZC, ZCU-IV, Kanpur, 3. Reader, R.B.S.College, Bichpuri, Agra.

Corresponding author E-mail: bmeena65@yahoo.co.in

ABSTRACT

The study was conducted in Jhansi district of Bundelkhand region. It was found that majority of the respondents (69.58 %) had the medium level of knowledge regarding feeding practices of dairy animals. The highest extent of knowledge was observed on dry animal feeding practices (69.60%) followed by feeding of heifers i.e. 65.82 percent, and lowest was observed in the feeding of calves (43.08%). Further it was found that large farmers hold maximum knowledge up to the extent of 60.57 percent and lowest knowledge was possessed by medium farmers (57.17%), where as remaining three categories of farmers were having near about 58 percent extent of knowledge in relation to scientific feeding practices of dairy animals. On the whole the respondents of the study area were having 58.66 per cent extent of knowledge on scientific feeding practices of dairy animals. The path analysis indicated that risk orientation was the most potent variable in effecting the knowledge of farmers positively.

Key words : Dairy animals; Farmers feeding practices; Knowledge

Dairy Development play a prominent role in the rural economy in supplementing the income of rural house holds, particularly the landless, marginal and small farmers. It also provides subsidiary occupation in semi urban areas and more so far people living in hilly, tribal and drought prone area where crop output may not sustain the family. According to the estimates of the central statistical organization (CSO), the value of output from livestock was about Rs. 1, 73,350 crores at current prices in 2005-2006. Milk accounted for 68 percent of this output. It was higher than paddy or wheat in term of values of output, milk is now the single largest agricultural commodity in India (Bhasin, 2008).

The low average milk production by the Indian cattle and buffaloes can be attributed to several reasons. However, inadequate nutrition is the single largest factor responsible for low milk production in animals of well-defined breeds. Several sources indicated that there is scarcity of, green fodder, dry fodder and commercial concentrates in the country due to which animals do not get adequate feeding for expression of their genetic potential for milk production (NCA, 1976; Ranjan, 1994; NDRI, 1996).

Large ruminants receive about 50-60 percent of their dry matter requirement from crop residues (straw, stovers). This is supplemented with small quantity of grasses, available through scanty grazing or grass cut.

Very rarely, the concentrate is offered to the growing, working, pregnant or dry animals. Only lactating animals are offered a relatively better feeding through supplementation of by-products, concentrates (oilcakes, brans, Chunnies, etc.), etc. since the farmers receive immediate returns on this investment. Feeding systems in India are, therefore, predominantly based on crop residues like straw, stovers and small amount of green fodder and concentrate.

An effort was made through this study to find out the farmers' knowledge on scientific feeding practices of dairy animals in Jhansi district of Bundelkhand region with the objectives i.e. to measure the extent of knowledge on scientific feeding practices of dairy animals and to find out the direct and indirect effect of independent variables on knowledge.

METHODOLOGY

The study was conducted in Jhansi district of Bundelkhand region. The district has been divided in 8 strata based on the soil type, fertility status, milk production and forest cover. From each stratum, one village amongst the mentioned villages was selected randomly to represent the strata. From the each selected village 30 respondents from different land holding categories were selected by applying proportionate random sampling technique. The respondents were those who had at least one milch animal

at the time of investigation. The information was gathered through well structured and pre-tested interview schedule by interviewing 240 farmers from 8 villages.

The knowledge was measured by developing a test which comprised twenty important practices concerning calves feeding, heifer feeding, pregnant animal feeding, animal in milk feeding, dry animal feeding aspects, was developed as per procedural steps. In the knowledge test there were twenty questions, the score for each correct answer was arranged three and zero for the incorrect / wrong answer. Thus, maximum obtainable score of knowledge was 60, whereas minimum could be zero and extent of knowledge was calculated by following formula

$$\text{Extent of Knowledge} = \frac{\text{Obtained score}}{\text{Maximum possible score}} \times 100$$

To see the channelising effect on the knowledge of the respondents path coefficient analysis (Singh and Choudhary, 1977) was also applied.

RESULTS AND DISCUSSION

In the present study Knowledge was operationalised as the extent to which and understood information possessed by the respondents about the recommended feeding practices of dairy animals in the study areas.

Distribution of Respondents based on Knowledge : The findings presented in Table-1 revealed that majority of the respondents (69.58 %) had the medium level of knowledge regarding feeding practices of dairy animals as compared to 15.42 percent in high level and 15.00 percent in low levels, respectively. The mean score of the knowledge was 35.20 and the standard deviation of the sample was about 6.45. It could be interpreted from these figures that there was a scope to convert the respondents from medium knowledge category to high score category.

Table 1. Distribution of respondents based on knowledge

S.No.	Category	Frequency	Percentage	Mean	S.D.
1	Low (< 29.75)	36	15.00	35.20	6.45
2	Medium (29.75-41.65)	167	69.58		
3	High (> 41.65)	37	15.42		

The above findings are in line with those of Sankhala, et.al (2000), who also reported that majority of the dairy farmers possessed medium level of knowledge related to improved dairy farming practices.

Extent of knowledge on scientific feeding practices of dairy animals :

(a) *Feeding of calves :* In case of calves feeding practices, it could be observed from the Table -2 that marginal farmers (46.83%) had more knowledge whereas, medium, landless and small farmers which having about 43.00 percent of extent of knowledge on calves feeding. It was surprised to know that large farmers had 38.83 per cent of extent of knowledge in the calves feeding practices. The possible reason might be that large farmers were having more income from the land as compared to others categories of farmers. That's why they did not bother to rear the animals on scientific line. While landless, marginal and small farmers were having less income from the land and as a result to enhance their income they reared the dairy animals on scientific lines. The pooled extent of knowledge of the respondents was observed 43.08 percent on calves feeding practices in the study area. It was observed that respondents had poor knowledge on colostrums feeding and quantity of milk to feed to newborn calves.

(b) *Feeding of heifers :* A glance at the figures presented in Table-2 revealed that farmers of the study area were having 65.33 per cent of extent of knowledge on the feeding practices of heifers. Land less and marginal farmers were having 70.50 and 67.92 percent extent of knowledge. While comparatively less extent of knowledge (61.83%) was observed among the medium farmers. These findings lead one to conclude that landless and marginal farmers were having more knowledge as compared to large and medium farmers. During the investigation, it was told by the respondents that land less and marginal farmers obtained heifers from medium and large farmers for due care and after calving the fifty percent cost of that animal were paid by the owner of the heifer i.e. medium and large farmers to the caretaker. Due to that, fact marginal and land less farmers were having more knowledge. It was also observed that farmers having less knowledge in the feeding of concentrate for growing heifers.

Table 2. Extent of knowledge regarding feeding practices of dairy animals

Farmers' Category	Scientific feeding practices in percentage					
	Calves	Heifer	Pregnant animals	animals in milk	Dry animals	Total
Land less	42.92	70.50	51.92	57.67	67.33	58.07
Marginal	46.83	67.92	52.00	57.42	70.00	58.83
Small	42.83	64.58	55.17	62.75	67.92	58.65
Medium	42.92	61.83	52.58	59.92	68.58	57.17
Large	38.83	64.25	57.08	68.50	74.17	60.57
Pooled	42.87	65.82	53.75	61.25	69.60	58.66

(c) *Feeding of pregnant animals* : The extent of knowledge on feeding of concentrate to advanced pregnant animals was comparatively less. Further, the data presented in Table -2 revealed that large and small farmers had 57.08 and 55.17 per cent extent of knowledge on feeding of pregnant animal whereas, land less (51.92%) and marginal (52.00%) farmers had comparatively less knowledge. During the data collection it was observed that large and small farmers concentrated their mind on feeding of advanced pregnant animals and mostly stall feeding was used to feed the concentrate to their pregnant animals.

(d) *Feeding of milking animals*: It was observed that farmers had sufficient knowledge of feeding of concentrate to the milking animals. It was also observed that farmers of the study area were feeding ration in the form of dry fodder+ green fodder+ mustard cake+ barley/ wheat flour+ common salt to these animals. It was surprised that not a single farmer was having the knowledge about feeding of mineral mixture in the study area. It is clear from the Table -2 that large and small farmers were having 68.50 and 62.75 per cent extent of knowledge on feeding practices of milking animals. Marginal (57.42%) and land less (57.67%) farmers had comparatively less knowledge about the feeding of these animals. As explained in the feeding of heifers that after calving, milking animals were taken back by the large farmers from the land less and marginal farmers, which resulted less number of milking animals in their herds of land less and marginal farmers.

(e) *Feeding of dry animals* : The findings presented in Table -2 revealed that respondents of Jhansi district were having 69.58 per cent extent of knowledge in relation to feeding practices of dry animals. Large farmers had highest knowledge i.e. 74.17 percent where as landless

farmers had lowest knowledge i.e.67.33 percent on the feeding of dry animals. It was justified that same results were observed in case of feeding of milking animals feeding. During the course of investigation it was observed that farmers offered somehow equal amount and type of feeding to their adult (wet and dry) animals, without knowing the nutrient requirement of animals on different stages.

On the whole it could be stated that the respondents of the study area were having 58.66 per cent extent of knowledge on scientific feeding practices of dairy animals. The results indicated that large farmers hold 60.57 percent knowledge where as remaining four categories of farmers were more or less having equal extent of knowledge in relation to feeding practices of dairy animals.

Path Analysis : The path analysis results presented in Table-3, indicated that risk orientation was the most potent variable in effecting the knowledge of farmers positively. The direct effect (0.4515) of this variable was highest. Indirectly it was exerting its influence through attitude, localite sources of information and mass media exposure. Incidentally this variable was being used by as many as nine variables in exercising their indirect influence, which indicate its significant role on the knowledge. Next in order of importance was attitude towards dairy farming, which had 0.7291** correlation coefficient, 5.3100** regression coefficient, 0.3006 direct effect and 0.4285 indirect effect on the knowledge of farmers. Its total indirect effect was channelized through risk orientation, localite source of information and mass media exposure. This was the most crucial variable as it is being utilized by twelve variables to exert their indirect influence. It was quite logic to assume that those farmers who had favourable attitude towards dairy farming would like to acquire more knowledge on scientific feeding practices of dairy animals.

Table 3. Path analysis of selected independent variables with knowledge

Variables	'r ' value	Direct effect	Indirect effect	Substantial indirect effect through single variable		
				I	II	III
(X1) Age	0.0730	0.0025	0.0705	0.0488 (X13)	0.03153 (X14)	-0.0145 (X5)
(X2)Education	0.1012	0.0173	0.0839	0.0441 (X13)	0.0268 (X14)	0.0183 (X10)
(X3) Family Education Status	0.0481	-0.0369	0.0850	0.0390 (X13)	0.0177 (X14)	0.0121 (X9)
(X4) Family Size	0.0070	-0.0372	0.0442	0.0244 (X7)	-0.0148 (X5)	0.0123 (X11)
(X5) Social participation	0.0881	-0.0677	0.1558	0.0298 (X7)	0.0140 (X14)	-0.0126 (X6)
(X6) Occupation	0.0269	-0.0608	0.0877	0.0318 (X14)	0.0274 (X13)	0.0155 (X7)
(X7) Land holding	-0.0106	0.0839	-0.0945	-0.0240 (X5)	0.0173 (X14)	0.0143 (X9)
(X8) Herd size	0.1643	0.0238	0.1405	0.0492 (X7)	0.0361 (X9)	0.0265 (X14)
(X9) Milk production	0.1768	0.0670	0.1098	0.0390 (X13)	0.0249 (X10)	0.0249 (X14)
(X10) Mass media exposure	0.5481**	0.0978	0.4503	0.2240 (X13)	0.1606 (X14)	0.0521 (X11)
(X11) Localite source of information	0.5395**	0.0974	0.4421	0.2136 (X13)	0.1672 (X14)	0.0523 (X10)
(X12) Cosmopolite source of information	0.1586	0.0454	0.1132	0.0351 (X14)	0.0282 (X13)	0.0200 (X10)
(X13) Risk orientations	0.7605**	0.4515	0.3090	0.2102 (X14)	0.0485 (X10)	0.0461 (X11)
(X14) Attitude towards dairy farming	0.7291**	0.3006	0.4285	0.3157 (X13)	0.0542 (X11)	0.0523 (X10)

* Significant at 5 percent level of probability * *significant at 1 percent level of probability

The mass media exposure was positively correlated and contributing significantly to the variation in the knowledge. Its direct effect (0.0978) and total indirect (0.4503) influence was found to be additive. This showed that farmers who had more exposure to mass media such as radio, TV, newspapers, etc. would likely to acquire more knowledge on feeding practices of dairy animals. Similarly, there was a clear indication of the positive relationship ($r= 0.5395$) existing between localite source of information and knowledge. In a similar vein, it was found to be a positive contributor (0.3270) to the knowledge. The path analysis indicated that it was channellinging its additive effect both directly (0.0974) and indirectly (0.4421) on the knowledge of farmers. A major bulk of this total indirect was being routed through risk orientation in the form of first substantial indirect effect. This clearly showed the fact that those farmers who had contacted localite person more frequently were likely to be more knowledgeable than those who could not be in touch with these source of information.

CONCLUSION

On the whole it could be concluded that the respondents of the study area were having 58.66 per cent extent of knowledge on feeding practices of dairy animals. Further large farmers held 60.57 percent knowledge where as remaining four categories of farmers were more or less having equal knowledge in relation to scientific feeding practices of dairy animals. Finally, it was concluded that to enable the farmers acquiring the knowledge on scientific feeding practices of dairy animals, it is worth to increase the risk taking ability, favourable attitude towards dairy farming, mass media exposure and source of information. Hence, it was suggested that the technology dissemination system must be focused on these variables by organizing campaigns, field day, demonstration, exhibitions, Kisan Gosthi, Kisan Mela, extension talk, etc. so that farmers could acquire latest knowledge on scientific feeding practices of dairy animals.

REFERENCES

1. Bhasin, N. R. (2008). President's desk. *Indian Dairyman*. **60**(11):3-5.
2. National Commission on Agriculture (1976). Part VII, Government of India.
3. NDRI (1996) Estimates of nutrients requirement and availability for bovine population across major States in India, Publication No.- 281.
4. Ranjhan, S.K. (1994). Consultants reports on the availability and requirement of feed and fodder for Livestock and Poultry. Department of India, New Delhi.
5. Sankhala, G., Jha, S.K. Ram Chand and Meena, B.S. (2000). Level of knowledge and adoption of dairy husbandry practices by dairy farmers. *Indian J. Anim. Prod. Mgmt.* **26** (1&2) : 36-39

□ □ □ □ ■