



Research Article

A study on knowledge and adoption of dairy farmers about improved dairy management practices

■ K.N. MALI, R.B. BELLI AND S.S. GULEDAGUDDA

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SUMMARY : The study was conducted in Belgaum district of Karnataka during year 2012-13. Seventy two dairy farmers were selected by proportionate random sampling. The findings of the study revealed that, 37.50 per cent of the dairy farmers had medium knowledge level and 65.28 per cent of the dairy farmers had medium adoption level. Cent per cent of dairy farmers possessed complete knowledge about breeds of cow and buffalo, right time of artificial insemination, pregnancy test, period of insemination after normal calving and selection of breeds. Regarding health care management, majority of dairy farmers (94.44%) had complete knowledge about major diseases of dairy animals and symptoms of foot and mouth disease. The majority of dairy farmers (87.50%) regularly fed colostrums to newly born calf within half an hour of its birth and more than half (66.67%) of dairy farmers practiced pregnancy diagnosis regularly.

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BACKGROUND AND OBJECTIVES

Dairy farming is one of the important activities of the rural population of our country. Dairy is the most suitable production system that has enormous potential to improve the socio-economic status of the large percentage of the rural population. While the bulk of milk production is in the hands of numerous landless, marginal and small farmers scattered all over the country. India's livestock sector is one of the largest sectors in the world. It has been demonstrated in a study that there exists a close relationship between livestock farmers personal characteristics, attitude and management practices and farm performance (Tarabla and Dodd, 1990). In 2010-11 livestock generated output worth Rs. 2075 billion which accounted for 4 per cent of the national GDP and 26 per cent of the agricultural GDP. According to Department of Animal Husbandry Dairying and Fisheries, Ministry of Agriculture, GOI; the country's milk production increased from about

20 (mt) in 1960s to 127.9 million tonnes during 2011-12. Although, per capita availability of milk has increased from 128 g per day in 1980 to 291 g per day in 2011-12. In Karnataka's per capita availability of milk was 237g per day in 2010-11. Dairy sectors in Karnataka state have been an important component contributing significantly to the state's economy. Contribution from these sectors is to the extent of 2.97 per cent of the state's overall GDP and 22 per cent of the agricultural GDP.

RESOURCES AND METHODS

The present study was conducted in Belgaum district of Karnataka state by following Ex-post facto research design. In this district, Gokak, Ramdurg and Athani taluks which have maximum dairy societies have been selected purposively as locale of the study. From each selected village, list of dairy farmers were prepared. The farmer had more than four milch animals

Author for correspondence :**K.N. MALI**

Department of
Agricultural Extension
Education, College of
Agriculture, University
of Agricultural Sciences,
Dharwad (KARNATAKA)
INDIA
Email: [kashi4415@
gmail.com](mailto:kashi4415@gmail.com)

See end of the article for
authors' affiliations

considered as dairy farmers. From each village, 6 dairy farmers were selected randomly. Total 72 dairy farmers spread over in each of the 4 villages of 3 taluks constituted the sample for the study. Data were collected through face to face interview. Statistical analysis was done with the help of SPSS package. The 'teacher made test' was developed to measure the knowledge level of dairy farmers about improved dairy practices. The answer elicited from the farmers were quantified by assigning one score to correct answer and zero to wrong one. For the adoption level answers elicited from the farmers were quantified by giving 2, 1 and 0 scores for regularly, sometimes and never, respectively.

OBSERVATIONS AND ANALYSIS

Table 1 indicated that, 37.50 per cent of dairy farmers had

medium knowledge level about improved dairy management practices, followed by high (31.44%) and low (30.56 %) knowledge level about improved dairy management practices. It is clear that dairy farmers possessed medium knowledge. This is due to the fact that, majority of dairy farmers had experience in dairying, medium annual income and medium herd size.

Table 2 revealed that, under breeding practice, cent per cent of dairy farmers possessed complete knowledge about breeds of cow and buffalo, right time of Artificial Insemination, pregnancy test, period of insemination after normal calving and selection of breeds. Whereas, majority of (94.44%) the dairy farmers were had complete knowledge about symptoms of animals in heat.

In case of feeding practice, cent per cent of dairy farmers possessed complete knowledge about feeding of colostrums

Table 1: Overall knowledge level of dairy farmers (n=72)

Categories	Range	Frequency	Percentage
Low	< 36.61	22	30.56
Medium	36.62-43.13	27	37.50
High	> 43.13	23	31.94
Mean=39.88		S.D.=7.65	

Table 2 : Knowledge level about individual improved dairy management practices by dairy farmers (n=72)

Category	Frequency	%
Breeding		
Breeds of cow and buffalo	72	100.00
Symptoms of animal in heat	68	94.44
Right time of A.I.	72	100.00
Pregnancy test	72	100.00
Period of insemination after normal calving	72	100.00
Selection of breeds	72	100.00
Feeding		
Additional conc. feed to pregnant cow/buffalo in the advanced stage of pregnancy	68	94.44
Feeding of colostrums to newly born calf	72	100.00
Practice to feed the newly born calf	72	100.00
Practice of feeding fodder and concentrates	70	97.22
Health care		
Diseases of dairy animal	68	94.44
Time of vaccination against infectious diseases	66	91.66
Symptoms of foot and mouth disease	68	94.44
Symptoms of hemorrhagic septicemia	59	81.94
Miscellaneous management		
Clean milk production	72	100.00
Maintaining cleanliness of cattle shed	44	61.11
Dry period to be allowed for lactating pregnant animal	54	75.00
Dehorning of newly born calf	48	66.66
Maintaining records	67	93.05

to newly born calf and practices of feeding the new born calf. Followed by majority of dairy farmers (97.22%) had complete knowledge regarding feeding of fodder and concentrates. Whereas, 94.44 per cent of dairy farmers had complete knowledge about additional concentrate feed to pregnant cow/buffalo in the advanced stage of pregnancy.

Regarding health care management, majority of dairy farmers (94.44%) had complete knowledge about major diseases of dairy animals and symptoms of foot and mouth disease. Whereas, 91.66 per cent of dairy farmers had knowledge about time of vaccination against infection and more than one third of the dairy farmers (81.94%) had knowledge regarding symptoms of hemorrhagic septicemia,

respectively.

In case of miscellaneous management, cent per cent of dairy farmers possessed complete knowledge regarding clean milk production. While, 93.03 per cent of dairy farmers had complete knowledge regarding maintaining records followed by 75.00 per cent of dairy farmers had knowledge about 'dry period to be allowed for lactating pregnant animal, 61.11 per cent had knowledge regarding cleanliness of cattle shed and 66.66 per cent of dairy farmers had knowledge regarding dehorning of newly born calf.

The results from the Table 3 revealed that more than half of the dairy farmers (65.28%) had medium adoption level of dairy management practices followed by low (18.05%) level of

Table 3 : Overall adoption levels of improved dairy management practices by dairy farmers

(n=72)

Categories	Range	F	%
Low ($\bar{X} - 0.425SD$)	<20.6	13	18.05
Medium ($\bar{X} \pm 0.425SD$)	20.7-30.2	47	65.28
High ($\bar{X} + 0.425SD$)	>30.2	12	16.67
Mean=25.40			S.D.=11.39

Table 4: Adoption level about individual improved dairy management practices by dairy farmers

(n=72)

Sr. No.	Categories	Regular	Sometimes	Never
		f (%)	f (%)	f (%)
Breeding				
1.	Keeping watch on estrous cycle and heat symptoms of cow/buffalo	37 (51.39)	35 (48.61)	0 (0.00)
2.	Practicing A.I. at proper time of heat	44 (61.11)	28 (38.89)	0 (0.00)
3.	Practicing pregnancy diagnosis	48 (66.67)	24 (33.33)	0 (0.00)
Feeding				
1.	Feeding colostrums to newly born calf within half an hour of birth	63 (87.50)	8 (11.11)	1 (1.39)
2.	Feeding conc. mixture on the basis of milk production	50 (69.44)	21 (29.17)	1 (1.39)
3.	Feeding colostrums to newly born calves up to 5 days of its birth	30 (41.67)	41 (56.94)	1 (1.39)
4.	Growing green fodder	47 (65.28)	21 (29.17)	4 (5.56)
Health care				
1.	Practicing vaccination timely and regularly against the contagious diseases like HS, BQ and FMD	38 (52.78)	30 (41.67)	8 (11.11)
2.	Segregating the diseased animals suffering from contagious diseases	36 (50.00)	32 (44.44)	8 (11.11)
3.	Practicing deworming in calves for the prevention of parasitic diseases	39 (54.17)	25 (34.72)	12 (16.67)
4.	Treatment of umbilical cord to new born calf	31 (43.06)	21 (29.17)	24 (33.33)
Miscellaneous management				
1.	Providing clean and fresh drinking water to the animals	56 (77.78)	13 (18.06)	3 (4.17)
2.	Practicing full hand method of milking	58 (80.56)	13 (18.06)	1 (1.39)
3.	Maintaining the cleanliness of animal shed	56 (77.78)	16 (22.22)	0 (0.00)
4.	Practicing dehorning in calves	5 (6.94)	12 (16.67)	55 (76.39)
5.	Record maintaining			
	Income record	12 (16.67)	37 (51.39)	23 (31.94)
	Milk production record	8 (11.11)	51 (70.83)	13 (18.06)
	Animal health record	9 (12.50)	24 (33.33)	39 (54.17)
	Expenditure record	13 (18.06)	26 (36.11)	33 (45.83)

dairy farmers. While, only (16.67%) belonged to high level of adoption of dairy management practices. The probable reason behind this result might be due to the fact that dairy farmers got good practical exposure in updating their knowledge and putting the same in actual use. The above findings are in line with the findings of Chandrakala (1999).

A critical perusal of the data furnished in Table 4 portrays the practice wise adoption of improved dairy management practices by dairy farmers, under the sub headings such as breeding, feeding, health care and management practices.

In case of breeding practice, more than half (66.67%) of dairy farmers practiced pregnancy diagnosis regularly, 51.39 per cent of the dairy farmers were regularly keep watch on estrous cycle and heat symptoms of cow/buffalo. While, more than half of the 61.11 per cent of dairy farmers practiced regularly practice artificial insemination at proper time of heat. While, sometime response was given by (48.61%), (38.89%) and (33.33%) dairy farmers practiced, respectively. It is interesting to write that no one dairy farmers given never response to any of breeding practices. This might be due to the fact that lack of veterinary hospitals in village whereas not practicing artificial insemination at proper time of heat and also not aware about importance of pregnancy diagnosis might be the possible reasons for not practicing pregnancy diagnosis by the dairy farmers.

In relation to feeding practices, it could be seen that, the majority of dairy farmers (87.50) regularly fed colostrums to newly born calf within half an hour of its birth followed by (69.44%) of dairy farmers regularly fed concentration mixture based on milk production, 65.28 per cent of dairy farmers grew green fodder and 41.67 per cent of dairy farmers regularly fed colostrums to newly born calves up to 5 days of its birth. The reason given by respondents was that, their animals were not used to feed on concentrates and if ones fed and later discontinued, animals would not give good milk yield. The poverty also contributed to this factor to some extent. Gour and Patel (2003) also reported that unavailability of cheap and quality green fodder round the year was the major constraint faced by the dairy farmers. Further, the high cost of concentrates might have forced them not to feed concentrates to all categories of dairy animals. While, 56.94 per cent of dairy farmers sometime practiced followed by 29.17 per cent of dairy farmers sometimes grew green fodder and fed concentrated mixture based on milk production and only 11.11 per cent of dairy farmers sometimes fed colostrums to newly born calf within half an hour of its birth. It is interesting to write that very less dairy farmers given by 5.60 per cent of dairy farmers never grew green fodder. Non- availability of irrigation facilities for growing green forage crop round the year might be another reason besides land holding. Only 1.39 per cent of colostrums to newly born calf within half an hour of its birth, fed concentration mixture based on milk production

and fed colostrums to newly born calves up to 5 days of its birth. This might be due to the importance of health care known by dairy farmers.

It is observed that, more than half of the dairy farmers (54.17%) regularly practiced the deworming in calves; followed by 34.72 per cent sometimes and 16.67 per cent farmers did not practice. The reasons experienced by the researcher during their data collection were the importance of health care known by dairy farmers. Dube *et al.* (1989) also reported that high cost of treatments was the major constraint in adoption of improved dairy practices. While, more than half (52.78%) of the dairy farmers regularly practiced the vaccination timely and regularly against the contagious diseases like HS, BQ and FMD, followed by 41.67 per cent sometimes and 11.11 per cent not practiced. While, 50.00 per cent dairy farmers regularly segregated the diseased animals suffering from contagious diseases followed by sometimes (44.44%) and never (11.11%). Whereas, 43.06 per cent of dairy farmers had regularly practiced practice of treatment of umbilical cord to new born calf followed by 33.33 per cent dairy farmers never adopted 29.17 per cent of dairy farmers had sometimes practiced the treatment of umbilical cord to new born calf. The probable reason for practicing vaccination timely and regularly by dairy farmers, it might be due to the fact that dairy farmers possessed crossbred cows.

Under miscellaneous management, majority of dairy farmers (80.56%) regularly practiced full hand method of milking, sometimes (18.06%) and only 1.39 per cent of dairy farmers did not practiced. The reasons expressed by dairy farmers for practicing full hand method of milking that they were aware about full hand method but due the habitual to milking method, they did practice full hand method and they perceived that if they had changed the method of milking, milk yield would reduce. Further, more than half of the dairy farmers (77.78%) both provided 'clean and fresh drinking water to the animals' and 'maintained' the cleanliness of animal shed' regularly, sometimes provided 'clean and fresh drinking water to the animals' (18.06%) and maintained' the cleanliness of animal shed' (22.22%) and only 4.17 per cent did not adopted. This might be due to the reason that respondents might perceived them easy to follow. However, only 6.94 per cent of dairy farmers regularly practiced dehorning in calves, 76.39 per cent of dairy farmers did not practiced and 16.67 per cent of dairy farmers sometime practiced dehorning in calves. This might also be due to the good awareness about these practices.

In case of record maintaining, more than half of dairy farmers (54.17%) did not practiced and only 12.50 per cent of dairy farmers regularly maintained the animal health record, whereas, in case of milk production record, majority of dairy farmers (70.83%) maintained sometimes followed by never (18.06%), regularly(11.11%) maintained milk production record. While, in case of income record, 51.39 per cent of dairy farmers

sometimes maintained income record followed by never maintained dairy farmers (31.94%) and only 16.67 per cent maintained regularly. However, 45.83 per cent of dairy farmers did not maintain the expenditure record followed by 36.11 per cent sometimes and 18.06 per cent of the dairy farmers maintained regularly. The possible reason for maintaining income and milk production records by dairy farmers might be due to their higher milk yield and also maintaining these records were directly linked with their daily earning. But in case of animal health record and expenditure record, they felt that these records did not play an important role in managing dairy enterprise being the time consuming activities. Hence, they did not maintain these records. But majority of the dairy farmers not maintaining any record might be the low milk yield and unawareness about the importance of record maintaining. The findings of Sathiadas *et al.* (2003) lend support to the findings of the present study who also concluded that majority of dairy farmers had practiced artificial insemination, vaccination against contagious diseases and feeding colostrums to newly born calf. The similar findings were reported by Singh *et al.* (2004) and Sheela (1991); Kulkarni *et al.* (1990) and Gour and Patel (2003) also reported that lack of institutional credit was the major constraint in the adoption of improved dairy practices.

Conclusion:

Price of milk should be fixed based on the cost of milk production so as to provide good price for the milk and to encourage the dairy enterprise. Extension agencies should encourage the dairy farmers to take up fodder cultivation to minimize cost of milk production. To provide good employment and income generation activities for dairy farmers, it is better to establish small scale industries to prepare the milk products like, ghee, curd, butter, cheese, cova etc.

Authors' affiliations :

R.B. BELLI, Department of Agricultural Extension Education, College of Agriculture, BIJAPUR (KARNATAKA) INDIA

S.S. GULEDAGUDDA, Department of Agricultural Economics, College of Agriculture, BIJAPUR (KARNATAKA) INDIA

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