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THE STATE OF IMPROVED DAIRY FARMING PRACTICES: A STUDY OF RURAL DAIRY FARMERS IN ERODE DISTRICT

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Abstract

Dairy farming is a crucial activity in rural India and contributes significantly to the country's GDP. The adoption of modern scientific practices is essential for improving productivity and making dairy farming more profitable. However, the widespread adoption of modern techniques is dependent on the knowledge level of dairy farmers about these practices. This study aims to measure the knowledge level of rural dairy farmers in Erode district of Tamil Nadu state regarding improved dairy farming practices. The study employed an ex-post facto research design and a teacher-made knowledge test to measure knowledge levels in five domains: breeding, feeding, health care, general management, and clean milk production. The results reveal that the majority of dairy farmers had a medium knowledge level, while a small percentage had high knowledge levels. Although nearly all farmers had knowledge about colostrum feeding to the newly born calf and symptoms of mastitis, fewer had knowledge about dehorning of newborn calves and proper methods of milking. The study concludes that there is an enormous opportunity to improve the knowledge of dairy farmers, and suggests training programs, demonstrations, and social media messages to increase farmers' know-how of modern dairy husbandry practices. The findings highlight the significance of the dairy farming industry in India, which is the largest milk producer globally and contributes to 3.92% of the total GDP of the country.

Introduction

In India, dairy farming is considered as one of the important activities of the rural population of our country. India stands first in milk production, which is 14.6 per cent of the world production. According to the national accounts and central statistical organization, the
livestock sector contributes nearly 3.92 per cent of the total GDP of the country, which is nearly 25.8 per cent of total agricultural GDP contributions. In India the major bottleneck of dairy sector is its low productivity. In his

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study, Kumar *et al*., (2011) reported that, five dairy cows productivity in India is equal to a single dairy cow in the USA and ten dairy cows productivity in India is equal to a single dairy cow in New Zealand.

In addition to this, Indian dairy industry has a unique characteristic that the bulk of milk production is handled by small milk producers who are illiterate and ignorant of commercial and economic aspects of milk production and scattered all over the country. The major credit for India's position as highest milk producer and subsequent increase in per capita availability of milk has to be given to illiterate rural dairy farmers (Patel, 1993). Even though there is rapid advancement in the animal husbandry technologies, however the productivity of this sector still is very low in India. This may be due to various reasons like poor adoption and diffusion of new technologies (Rathod *et al.,* 2014).

It is well understood that for increasing productivity and production as well with an aim to make dairy business more lucrative, it is essential to go for adoption of modern scientific dairy farming practices in the field of feeding, breeding, health care and management of dairy animals. For this, Knowledge about modern dairy husbandry practices is pre-requisite for adoption of it which ultimately improves the dairy production. Hence, it becomes imperative to gather information from the farmers about knowledge on scientific dairy farming practices from the field level, which could help in formulating action plan as per need of farmers.

Methodology

The present study was conducted in Erode district of Tamil Nadu state by employing Ex-post facto research design. The study was designed to analyze the knowledge of the rural dairy farmers about improved dairy farming practices. From this district, Gobichettipalayam and Bhavani taluks which have maximum dairy societies have been selected purposively as locale of the study. Three rural villages were selected randomly from each taluks and from each selected village, ten respondents having more than two dairy animals (cattle/buffalo/both) were chosen randomly with the help of local Veterinarian / members of village dairy cooperative, which constituted a total of 60 respondents for the study. A teacher made knowledge test was developed in consultation with literatures and experts to measure the knowledge level of dairy farmers about improved dairy practices. The developed knowledge test consists of six questions in each of the five domains *viz.,* breeding, feeding, health care, general management and clean milk production, hence totally thirty questions. The score for each correct answer was assigned as 3 and 0 for the incorrect / wrong / missing answer. Thus, maximum obtainable score of knowledge was 90, whereas minimum could be zero and extent of knowledge was calculated by following formula

$$\text{Extent of Knowledge} = \frac{\text{Score obtained by the respondent}}{\text{Maximum possible score}} X\ 100$$

Data were tabulated and analyzed using appropriate statistical tools and accordingly interpreted to get results and logical conclusion of the study

Results and Discussion 1. Overall Knowledge level of dairy farmers about improved dairy farming practices

N=60

Knowledge Categories	Extent of Knowledge Range	Frequency (f)	Percentage (%)
Low	< 38.58	19	31.67
Medium	38.59 – 51.28	32	53.34
High	> 51.29	09	15.00

Mean = 44.93 S.D. = 6.35

It could be observed from Table 1 that, majority (53.34 %) of the dairy farmers studied had medium knowledge level about improved dairy management practices, followed by low (31.67 %) and high (15.00 %) knowledge level about improved dairy management practices. This is may be due to the fact that, majority of dairy farmers in the study area had taken up dairying as a familial enterprise without having any formal training on dairying. In the earlier studies, similar observations were reported by Kumar et al., (2001) and Sharma et al., (2007).

2. Knowledge level of respondents with respect to individual dairy farming practices

Table 2: Knowledge of respondents in respect of individual dairy farming practices

Sl.No	Knowledge item	Frequency (f)	Percentage (%)
A	**Feeding practices**		
1	Feeding of colostrums to newly born calf	58	96.67
2	Practice to feed the newly born calf with concentrate	37	61.67
3	Preparation of concentrate feed by using local ingredients	14	23.33
4	Importance of additional concentrate feed to pregnant cow/buffalo in the advanced stage of pregnancy	42	70
5	Quantity of green fodder given to an adult animal daily	32	53.33
6	Quantity of mineral mixture added in daily ration	49	81.67
B	**Breeding practices**		
1	Age at first heat	36	60.00
2	Symptoms of heat detection	55	91.67
3	Period of insemination after normal calving	31	51.67
4	Identification of reproductive problems	41	68.33
5	Importance of A. I	48	80.00
6	Right time for A.I / service	50	83.33
C	**Health care**		
1	Prevention of calf scour / navel ill	42	70.00
2	Symptoms of metabolic disease like Milk fever, Ketosis etc	45	75.00
3	Symptoms of foot and mouth disease	50	83.33
4	Vaccination schedule for calf and adult animals	49	81.67
5	Deworming schedule for calf and adult animals	33	55.00
6	Symptoms of mastitis	54	90.00
D	**General management**		
1	Method of Umbilical card ligation	28	46.67
2	Dehorning of newly born calf	14	23.33
3	Importance of isolation of sick animals	31	51.67
4	Knowledge about high yielding varieties of fodder	43	71.67
5	Method of cleaning of cattle shed	48	80.00
6	Control of ectoparasites	51	85.00
E	**Clean milk production**		
1	Importance of washing the udder before milking	58	96.67
2	Cleaning the utensils with boiled water or detergent before milking	41	68.33

3	Cleanliness of the shed	48	80.00
4	Avoiding the first few streams of milk from each teat	32	53.33
	while milking		
5	Right method of milking	35	58.33
6	Importance of dry period	37	61.67

A critical look in to the Table 2 exposed that under feeding practice, almost all (96.67 %) of dairy farmers possessed complete knowledge about colostrums feeding to newly born calf, followed by quantity of mineral mixture added in daily ration (81.67 %), importance of additional concentrate feed to pregnant cow/buffalo in the advanced stage of pregnancy (70.00 %). This may be due to the fact that colostrums feeding, mineral mixture addition and increased concentrate feeding to pregnant animals were the well adopted practices in that locality hence the respondents also known about it. Whereas, the method of Preparation of concentrate feed by using local ingredients was known to only 23.33 per cent of the respondents. Similar observations were also reported by Sharma *et al.,* (2007) and Meena *et al.,* (2009).

With respect to breeding practices, 91.67 per cent of the respondents had knowledge in symptoms of heat followed by the right time of AI /service (83.33 %) and importance of artificial insemination (80.00 %). The knowledge about the reproductive problems, age at first heat and the time to inseminate after normal calving was possessed by 68.33 per cent, 60.00 per cent and 51.67 percent respectively. These findings are in line with the findings of Rathod *et al.,* (2014) and Sharma *et al.,* (2007).

A vast majority of the respondents (90.00 %) had knowledge about the Symptoms of mastitis under the domain of health care followed by Symptoms of foot and mouth disease (83.33 %) and Vaccination schedule for calf and adult animals (81.67 %). The knowledge regarding Symptoms of metabolic disease like Milk fever, Ketosis etc., and prevention of calf scour / navel ill was possessed by 75.00 per cent and 70.00 per cent of the respondents respectively. These are similar to the observations Arora *et al.,* (2006). Surprisingly, only 55.00 per cent of the respondents know about the schedule of deworming owing to the fact that this practice has become a routine one and the farmers are not bothering the prescribed schedules and deworm their animals as and when required.

With regard to the general management practices in dairy farming 85.00 per cent of the respondent had knowledge in control of ectoparasites as this was the great bother for both the animal as well as the farmers. About 80.00 per cent of the respondents know the methods of cleaning their cattle sheds and about 71.67 per cent of them possessed the knowledge of high yielding varieties of fodder. Very few (23.33 %) of the farmers had knowledge on dehorning of new born calf as this prescribed practice was rarely adopted in field condition. As for as the knowledge domain of clean milk production is concerned, nearly all (96.67 %) of the respondents had knowledge on the importance of washing the udder before milking followed by the importance of Cleanliness of the shed (80.00 %). Cleaning the utensils with boiled water or detergent before milking (68.33 %) and the importance of dry period for clean milk production (61.67 %) were the practices known to the respondents. The knowledge about right method of milking and avoiding the first few streams of milk from each teat while milking was possessed by 58.33 and 53.33 per cent of the respondents respectively. The reasons expressed by dairy farmers for not practicing full hand method of milking due to the habitual knuckling milking method, and they perceived that if they had changed the method of milking, milk yield would reduce. The similar findings were reported by Gour and Patel (2003).

Conclusion

The study concluded that dairy farmers had medium level of knowledge regarding recommended management practices. There is enormous chance for the improvement in the knowledge of the dairy farmers. Milk price can be fixed based on the microbial quality of milk so as to provide good price for the good quality milk and to

encourage the dairy farmers in clean milk production. Hence, there is lot of scope for increasing the existing level of knowledge of dairy farmers about improved animal husbandry practices. More training programmes, demonstrations, field days, exhibitions, camps, radio/TV talks, message through Social Medias should be organized to increase the know-how of the farmers.

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