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Assessment of knowledge and skill need among farm women engaged in dairy farming in the Erode district of Tamil Nadu

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Abstract
Dairy farming significantly contributes to augmenting family income by offering meaningful employment opportunities, particularly in rural regions, notably among landless, small, marginal farmers, and farm women. While farm men predominantly engage in agricultural activities, farm women traditionally take on substantial responsibilities in dairy husbandry. Enhancing the profitability of dairy enterprises necessitates farmers' proficiency in adopting improved dairy farming practices. Consequently, it is essential to ascertain the training requirements of farm women to ensure the relevance and effectiveness of any training initiatives. The study was conducted in the Gobichettipalayam, Sathyamangalam, Bhavanisagar, and Thokkanaicken Palayam (T.N. Palayam) blocks of the Erode district in Tamil Nadu. A simple random sampling technique was employed to select a sample of 40 rural women actively involved in dairy farming from each block, resulting in a total sample size of 160. Data collection was carried out through personal interviews using a pre-designed interview schedule. Healthcare and disease control emerge as the primary areas of interest for both knowledge and skill-based training among respondents, with feeding and management, as well as housing of dairy animals, following closely. Conversely, marketing and finance are identified as the least preferred areas for training. In minor operations, the most sought-after knowledge pertains to the proper design of cattle sheds, breed selection, formulation of balanced feed utilizing locally available ingredients, vaccination protocols, and banking and insurance practices. Dairy farm women have indicated their preference for training during the summer season, ideally in March, conducted within their resident villages. The majority of respondents (77.00%) expressed a preference for a one-week duration of training, while 75.00% of farm women suggested an annual training interval. To enhance the knowledge and skills of dairy farmers, it is recommended to organize more participatory and need-based training sessions through outreach centers. Additionally, training modules for various dairy management practices should be developed in consultation with Subject Matter Specialists (SMS) to enhance production and productivity among dairy farmers.

Keywords: Knowledge and skill need, dairy farming, farm women

Introduction
Dairying holds significant importance within the national economy and contributes significantly to the socio-economic development of the country. It serves as a crucial means of augmenting household income by offering employment opportunities in rural areas, particularly benefiting landless, small, marginal farmers, and women engaged in farming. The universal recognition of the nutritional value of milk and milk products underscores their importance in maintaining human health. In India, rural women play a pivotal role in agricultural activities. The majority of rural farm women in India actively engage in various operations associated with the mixed farming system prevalent in the country. Both women and men collaborate in agricultural and dairy farming activities as integral family units on farms. Nonetheless, while farm men primarily undertake agricultural tasks, farm women predominantly shoulder responsibilities related to dairy husbandry, reflecting a longstanding tradition in Indian agriculture. Kumar *et al.,* (2011) [3] have observed a clear division of participation between farm men and farm women in both the agricultural and dairy sectors, with men typically involved in planning activities while women take on implementation tasks. However, the degree of their involvement varies based on the socio-economic and agro-climatic conditions of the region. Notably, farm women predominantly undertake the primary work associated with dairy farming activities. To enhance the profitability of dairy enterprises, it is imperative for dairy farmers to possess adequate knowledge and adopt improved dairy

farming practices, as highlighted by both Kumar *et al.,* (2011) [3] and Gunaseelan *et al.,* (2018) [2]. The majority of dairy farm women require support to enhance their capacity through extension education, particularly through training programs, to enhance their knowledge and instill confidence in their contributions to the existing farming system. Training enables farm women to adopt improved technologies while considering their resources, fostering sustainable and economically viable enterprises. Therefore, it is crucial to identify the training requirements of farm women to ensure that training efforts are meaningful and effective. Consequently, the study aimed to ascertain the training needs of farm women involved in dairy farming, with the goal of developing or designing appropriate training models to be provided to farm women in a timely manner and in the correct format, ultimately boosting the productivity and profitability of dairy businesses.

Materials and Methods

The current study was conducted in the Gobichettipalayam, Sathyamangalam, Bhavanisagar, and Thokkanaicken Palayam (T.N. Palayam) blocks within the Erode district of Tamil Nadu. A simple random sampling method was employed to select a sample of 40 rural women actively involved in dairy farming from each block, resulting in a total sample size of 160. Data collection was carried out through personal interviews utilizing a pre-designed interview schedule.

Results and Discussion

Training needs pertaining to the major farm operation in dairy farming for knowledge and skill

Table 1: Training needs pertaining to various major farm activities in dairy farm for knowledge and skill

Major farm operation	Knowledge		Skill	
	TNI	Rank	TNI	Rank
Housing of animals	64.0	III	62.0	III
Breeding management of animals	61.0	IV	58.0	IV
Feeding management of animals	66.0	II	72.0	II
Health care and disease control	78.0	I	76.0	I
Marketing and Finance	58.0	V	53.0	V

Table 1 reveals that healthcare and disease control rank highest as the preferred major farm operation for both knowledge and skill-based training among dairy farming women in the Erode district. A significant majority of dairy farmers expressed a need for training in healthcare and disease control, likely stemming from a lack of technical knowledge in this area. The prevalence of diseases and the lack of timely veterinary services in rural areas lead to substantial economic losses. This finding aligns with the observations of Kumar *et al.,* (2011) [3]. Additionally, feeding and management training emerged as the second most preferred major farm operation among respondents. This preference may be attributed to their desire to acquire methods and skills to enhance milk yield through proper feeding practices at reasonable costs, a finding also supported by Gunaseelan *et al.,* (2018) [2]. Moreover, housing for dairy animals ranked as the third important training need area among dairy farm women in the study area, consistent with the findings of Patel *et al.,* (2016) [4]. However, marketing and finance were identified as the least preferred areas for training by the respondents.

2. The knowledge and skill oriented training needs of dairy farm women in minor farm operations

It is evident from Table 2 that in the realm of housing for dairy animals, the majority of dairy farmers in the study area expressed a need for training in both the proper design of cattle sheds (for knowledge) and the construction of low-cost scientific cattle sheds (for skill). Under the training need category of breeding dairy animals, breed selection emerged as the foremost area for both knowledge and skill-oriented training needs. Dairy farmers likely perceive breed selection as a critical factor in achieving productivity in dairy animals, consistent with the findings of Patel *et al.,* (2016) [4]. Regarding feeding and management in dairy farming, significant training demand was observed for compounding balanced feed using locally available ingredients, aiming to mitigate the high cost of concentrates in the market. This finding aligns with the observations of Gunaseelan *et al.,* (2018) [2]. Conversely, minimal training was required for knowledge on the care and management of different age groups of animals, as most farmers were already familiar with these practices, a finding supported by Durggarani and Subhadra (2009) [1]. Additionally, since farmers were proficient in fodder cultivation, minimal skill training was sought in this area.

In the healthcare domain, vaccination emerged as the top priority for knowledge, while the identification of symptoms of common diseases was deemed essential for skill development. This indicates farmers' keen interest in disease control and identification, consistent with the findings of Durggarani and Subhadra (2009) [1] and Gunaseelan *et al.,* (2018) [2]. Concerning training needs in marketing and finance, Table 2 illustrates that farmers expressed the highest demand for training in banking and insurance, both for knowledge and skill development. This underscores farmers' limited knowledge of available financial assistance sources and insurance policies, aligning with the findings of Gunaseelan *et al.,* (2018) [2].

Table 2: Knowledge and skill oriented training needs of farmers in minor dairying farming operations

Sl. No.	Minor farm operation	Knowledge		Skill	
		TNI	Rank	TNI	Rank
I	**Housing of Dairy Animals**				
1	Formation of low cost scientific cattle farm	62.0	II	63.0	I
2	Proper design of cattle shed	66.0	I	61.0	II
II	**Breeding of Dairying Animals**				
1	Selection of breed	70.0	I	62.0	I
2	Heat detection	51.0	V	52.0	III
3	Time of insemination	57.0	IV	-	-
4	Maintenance of breeding records	66.0	II	60.0	II
5	Time of Post- Partum insemination	61.0	III	-	-
III	**Feeding and Management**				
1	Balanced feeding	70.0	II	74.0	II
2	Care and management of different age groups	60.0	V	72.0	III
3	Compounding balanced feed preferably using locally available ingredients	72.0	I	78.0	I
4	Fodder cultivation	66.0	III	66.0	V
5	Clean milk production	62.0	IV	70.0	IV
IV	**Health care**				
1	Deworming	84.0	II	–	–
2	Vaccination	86.0	I	–	–
3	Control of ectoparasites	60.0	V	74.0	III
4	Identification and isolation of sick animals	78.0	IV	76.0	II
5	Symptoms of common diseases	82.0	III	78.0	I
V	**Marketing and finance**				
1	Banking and insurance	64.0	I	54.0	I
2	Marketing of livestock and livestock products	52.0	II	52.0	II

Preference of dairy farmers about season, month, place, duration and interval of training

Season of training

In terms of the preferred season for training, the majority of farmers (72.00%) indicated a preference for summer months, followed by 21.00% expressing a preference for winter months, while only seven percent of farmers expressed a willingness to undergo training during the monsoon season. This preference aligns with the findings of Kumar *et al.,* (2011) [3].

Month of training

When farmers were asked about their preferred month for training, the majority (65.00%) expressed a preference for training in March. Approximately 10% of farmers preferred May, while 14% favored April and November for their training. Less than 11% indicated a preference for other months. This finding closely aligns with the results reported by Gunaseelan *et al.,* (2018) [2].

Place of training

Regarding the preferred location for training, a significant majority of respondents (66.00%) expressed a preference for training to be arranged in their resident village by the concerned authority. Sixteen percent of farmers indicated a willingness to attend training at nearby Veterinary Colleges, while 18% showed interest in training at Veterinary University Training and Research Centers or other related training institutes. This finding is consistent with the observations of Gunaseelan *et al.,* (2018) [2], who also noted that a high percentage of farmers preferred training in their resident village.

Duration of training

Regarding the duration of training, the majority of dairy farm women (77.00%) preferred a one-week training period, with 15% of farmers expressing a preference for a two-week training period. Only eight percent of farmers indicated a desire for a three-week training duration. While our findings align with the preferences expressed by dairy farm women, it's noted that there is a slight difference from the study conducted by Durggarani and Subhadra (2009) [1].

Interval of training

The majority of dairy farm women (75.00%) expressed a preference for training sessions with an interval of one year, followed by 15.00% of respondents who favored a six-month interval, and 10% of dairy farm women who expressed a desire for training sessions with a two-year interval. Similarly, Durggarani and Subhadra (2009) [1] also reported that a majority (62.00%) of farm women preferred training sessions with a one-year interval. From this study, it can be inferred that dairy farmers in the study area require training in all major aspects of dairy practices. Furthermore, to formulate effective training programs in dairy farming, it is essential to consider dairy farmers' preferences regarding various aspects such as season, month, place, duration, and interval of training, facilitating better adoption of scientific dairy practices.

Summary

A study conducted in the Erode district of Tamil Nadu aimed to assess the training needs of farm women engaged in dairying. The findings revealed that among the five major dairy farm operations studied, health care and disease control emerged as the foremost training need for dairy farm women. Regarding minor operations, the most preferred knowledge areas included proper design of cattle sheds, breed selection, compounding balanced feed using locally available ingredients, vaccination, banking, and insurance.

The study also highlighted the preferences of dairy farm women regarding training sessions. They expressed a

preference for training during the summer season, particularly in the month of March, conducted in their resident villages. Additionally, the majority of respondents (77.00%) preferred a one-week duration for training, with 75.00% of farm women preferring training intervals of one year.

To enhance the knowledge level of women dairy farmers and improve dairy productivity in India, effective strategies can be developed by extension agencies. These may include organizing participatory and need-based training activities such as field days, exhibitions, camps, radio/TV talks, farmer's fairs, demonstrations, etc., through outreach centers like Krishi Vigyan Kendras, Farmers Training Centers, Veterinary University Training Research Centers (VUTRCs), State Departments of Animal Husbandry, and other NGOs. Furthermore, the development of training modules for various dairy management practices in consultation with Subject Matter Specialists (SMS) can help improve production and productivity among dairy farmers.

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