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# Knowledge Assessment of Farmers Regarding Sericulture Based Dairy Farming in Karnataka State

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***Authors' contributions***

*The work was carried out in collaboration among all authors. Author CEG designed the study, performed the statistical analysis and wrote the first draft of the manuscript. Author KM managed the literature searches of the study and checked the first draft. Author KSK was the major advisor and chairperson and author BSM was one of the Research Advisory Committee members who guided in publication of this research paper. All authors read and approved the final manuscript.*

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## ABSTRACT

Sericulture and dairy farming play synergistic role in the livelihood of farmers particularly in Karnataka state. It provides assured income and employment to the farmers. Karnataka is the highest silk as well as 11$^{th}$ topmost milk producing state in India. The study was conducted in Kolar and Chikkaballapura district of the state. A total of 180 respondents were selected for the study. Semi-structured interview schedule was used for field investigation. Result reveals that, about 49.44% of sericulture based dairy farmers belongs to medium knowledge category, whereas about 30.56% of respondents belongs to low knowledge category and only 20% belongs to the high knowledge category of sericulture based dairy farming. Therefore, knowledge of farmers about sericulture based dairy farming practices need to be given special emphasis with various effective extension approaches.

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## 1. INTRODUCTION

Traditional farming system used by farmers in India are based on centuries of experiences characterized by mixed farming involving crop production with one or more enterprises like dairy, sericulture, poultry, piggery, sheep, goat, fisheries and bee-keeping [1]. Their main aims were to achieve stability of production, provide subsistence for the family and guard against weather aberration and other environmental stresses. Dairy enterprise is one of the important activities which can suit the performance of sericulture. As it is very well known that the combination of enterprises 'silk and milk' is very popular [2] even now in Kolar and Chikkaballapura district of Karnataka. Many studies have also revealed this fact as true from the sense of effective enterprise combination. The farmers of these districts are known to be highly innovative and the routine agricultural crops are combined inter aliawith allied enterprises such as vegetables, dairy, sericulture, poultry and piggery. Earlier studies revealed that when dairy enterprise was combined with other enterprises on scientific lines offered greater opportunities for increasing farm income and employment, particularly to the weaker sections of the rural community [3]. However past studies have highlighted knowledge level in adoption of sericulture based dairy farming. With regard to knowledge in dairy farming,a study revealed that majority of the dairy farmers (97.50%) had knowledge about cleaning animal udder, hands and vessels, followed by improved breeds (91.25%), care of calf (91.25%), animal insurance (91.25%) and clean drinking water (86.25%). Whereas, 47.50 per cent of dairy farmers had lack of knowledge about enrichment of dry fodder, followed by shed for milking animals (33.75%) [4]. Further studies indicated that the dairy co-operative society memberspossessed highest knowledge on the aspects viz. type of flooring for shed (88.75%) followed by appropriate method of milking (84.17%), methods of insemination (76.46%), time taken by buffalo to expel placenta (76.25%), feeding of animals after calving (76.25%) and improved breed of buffalo for milk production [5]. It was also reported that farmers were aware of some common livestock practices, like artificial insemination (91.67%), importance of protection of animals against ecto-parasites and vaccination (75%), importance of feeding colostrums to the calves (73.61%) and concentrates to pregnant animals (69.44%). Whereas, the farmers were largely unaware of certain improved animal husbandry practices like superiority of fodder seeds (20.75%), feeding of urea treated straw (100%) and practice of weaning in their animals (34.72%) [6]. Regarding knowledge on clean milk production, a West Bengal based study revealed that equal per cent of the dairy farmers had low (30%) and lower medium (30%) level of knowledge, followed by high (22.50%) and upper medium (17.50%) level of knowledge regarding clean milk production practices [7]. Similar results were observed by majority of the dairy women who had medium knowledge level towards clean milk production practices [8]. Majority of rural women dairy farmers possessed poor knowledge about symptoms, control measures, vaccination schedule of different type of diseases, such as Foot and Mouth Disease, H.S, Black Quarter, etc. [9]. However, there were few evidences on assessment of knowledge base of farmers regarding sericulture based farming, A knowledge test conducted among 70 sericulture adopters in Udaipur district, Rajasthan, India, revealed that majority of them (55.71%) possessed a medium level of knowledge on sericulture [10]. Another study undertaken in four taluks of Karnataka state exhibited that majority of the farmers had moderate knowledge about organic sericulture practices (54%) followed by low (30%) and high categories (16%) [11]. Keeping this into consideration, the study was conducted in Karnataka to access the level of knowledge among farmers practicing sericulture based dairy farming.

## 2. MATERIALS AND METHODS

The study was undertaken in the Karnataka state during the year 2017-18. The said state was purposively selected as Karnataka being the highest producer of silk in the country and was ranked 11$^{th}$ among milk producing states in India [12]. Two districts were selected for the purpose of study (Kolar and Chikkaballapura).From each districts two blocks were randomly selected. And, from each block three villages were randomly selected, wherein 15 respondents were randomly selected from each village. Therefore, a total of 180 respondents were selected for the study. Data were accumulated by using a comprehensive well-structured schedule by personally interviewing the farmer of randomly

selected villages. Knowledge levels of the farmers were measured with respect to the different component of sericulture based dairy farming practices as per scale developed by Lindquist [13]. After modification, the knowledge test was re-tested for reliability and internal validity. In the modified knowledge test there were 17 questions related to various aspects of sericulture based dairy farming. The score for each correct answer was assigned as one and zero for the incorrect/wrong answer. To measure the knowledge level of farmers, farmer's responses were recorded. Knowledge index were determined by using formula given below:

$$\text{Knowledge Index} = \frac{\text{Obtained score}}{\text{Maximum obtainable score}} \times 100$$

The data were then classified, tabulated and statistically analyzed which led to the following results. The mean score and standard deviation for knowledge were calculated to categorize the respondents into three group viz. low, medium and high level of knowledge.

## 3. RESULTS AND DISCUSSION

Knowledge level farmers about sericulture based dairy farming practices with respect to individual statements have been presented in Table 1. It can be observed that 94.40 per cent of the

**Table 1. Specific knowledge of farmers regarding sericulture based dairy farming (n=180)**

| Sl. no. | Statements about sericulture based dairy farming practices | Knowledge of respondents | | | |
|---|---|---|---|---|---|
| | | Correct knowledge | | Incorrect knowledge | |
| | | No. | % | No. | % |
| 1 | Are mulberry leaves or extra- tillers used as fodder for animals, especially during drought season? | 170 | 94.4 | 10 | 5.56 |
| 2 | Distance of storage pits from the silkworm rearing house? | 163 | 90.55 | 17 | 9.44 |
| 3 | Do you know about application of cow dung in other form in mulberry garden? | 108 | 60.00 | 72 | 40.00 |
| 4 | Which are the high yielding breeds of cow for rearing in India? | 129 | 71.6 | 51 | 28.4 |
| 5 | Colostrums' feeding to calves is done within what time? | 94 | 52.22 | 86 | 47.88 |
| 6 | Are proper management practices followed in order to keep animal healthy? | 124 | 68.88 | 56 | 31.22 |
| 7 | In what form mulberry can be fed toanimals? | 180 | 100 | 0 | 0 |
| 8 | Left over materials of dairy farming is used as…? | 157 | 87.22 | 23 | 12.78 |
| 9 | Storage of dung and leftover is done in the form of....? | 109 | 60.56 | 71 | 39.44 |
| 11 | Which is the suitable time of harvesting of leaves in a day? | 137 | 76.12 | 43 | 23.88 |
| 12 | Which is the best silk worm breed reared in Southern India? | 112 | 62.2 | 68 | 37.8 |
| 13 | The Best method of silkworm rearing..? | 150 | 83.34 | 30 | 16.66 |
| 14 | Type of Montage adopted…? | 152 | 84.44 | 28 | 15.66 |
| 15 | The correct time of insemination of animal in heat is…? | 133 | 73.88 | 47 | 26.12 |
| 16 | Name three fodder crops? | 180 | 100 | 0 | 0 |
| 17 | A cross bred cow regularly calved at a time interval of every….? | 63 | 35.00 | 117 | 65.00 |

**Table 2. Overall knowledge of farmers about sericulture based dairy farming (n=180)**

| Category | Frequency | Percentage |
|---|---|---|
| Low (<7.83) | 55 | 30.56 |
| Medium(7.84 to 20.77) | 89 | 49.44 |
| High (> 20.77) | 36 | 20.00 |
| Mean=14.3 | S.D=6.47 | Range=5-30 |

respondents had correct knowledge about mulberry leaves, extra tillers, which were used as fodder for dairy animals especially during dry season. About 90.55 per cent of the farmers were aware about the distance of storage pits from the silkworm rearing house that was 150 meters Majority of the respondents (60%) knew the application of cow dung to mulberry garden. About 71.6 per cent of the respondents had correct knowledge about which animals are being reared that are high yielding in India. Nearly half of the respondents (52.22%) had correct knowledge about feeding the colostrum to calves. A considerable majority of 68.88 per cent of the respondents knew about the management practices that were required to keep the animal healthy.

It was interesting here to observe that 100 per cent respondents were having knowledge about the form of feeding mulberry to animals, 87.22 per cent of respondents knew the proper utilization of left over materials of mulberry. Correct knowledge among the respondents about the form of storage of dung and left over was about 60.56 per cent. About 76.12 per cent of respondents had correct knowledge about suitable time of harvesting leaves in a day (morning hours). The knowledge about best silkworm breed that is followed in South India was known to 62.2 per cent. Around 83.34 per cent of respondents had knowledge about best method of silkworm rearing. Knowledge about type of montage adoption was known to 84.44 per cent, Rotary method was found to be best for silkworm rearing but as it cost much to the farmers so they adopted bamboo montage. Knowledge about correct time of insemination to animal was known to 73.88 per cent of respondents. Also the interesting view noted was that the knowledge about fodder crops was known to all the respondents (100%). Finally, the correct knowledge regarding calving interval of cows were known to only about 35 per cent respondents.

The data in Table 2 revealed that 49.44 per cent of the respondents belongs to medium knowledge level category whereas, 30.56 per cent belongs to low knowledge category and only 20.00 per cent belongs to the high knowledge level category, respectively. From the above results, it is clear that a large number of dairy farmers possessed low to medium level of knowledge due to inadequate extension contact; respondents had less access to the farmer training programs, lower participation in dairy and sericulture extension activities, very few members of society attended training programs might be the reason for low level of knowledge regarding sericulture based dairy farming. The findings of the present study were in conformity with the finding of Chaudhary and Panwar, Maity et al. and Deepak [5,8,14].

## 4. CONCLUSION

An overall study of farmers' knowledge of sericulture-based dairy farming showed that 49.44% of respondents belonged to the category of medium knowledge, while 30.56% belonged to the category of low knowledge and only 20.00% belonged to the category of high knowledge, respectively. From the findings, it was apparent that a significant number of dairy farmers possessed a low to medium level of knowledge due to insufficient extension contact; respondents had less access to farmer training programs, less participation in dairy and sericulture extension activities, and even fewer members of society attended training programs due to the low level of awareness of the respondents in relation to sericulture and dairy based activities. The study further suggests that the farmer and other stakeholders must be sensitized and trained in scientific sericulture-based milk production by means of adequate extension, policy and financial support to grow sericulture and dairy-based integrated agriculture broadly in the State of Karnataka.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Kumar S, Bhatt BP, Dey A, Shivani, Kumar U, Idris M, Mishra JS, Kumar S. Integrated farming system in India:

Current status, scope and future prospects in changing agricultural scenario. Indian Journal of Agricultural Sciences. 2018;88 (11):13-27.
2. Mehla RK, Patel RK, Tripathi VN. A model for sericulture and milk production. Agricultural systems. 1987;25(2):125-33.
3. Komala CN. Risk efficient farming system for sustainable agriculture – Models for Kolar District of Karnataka, M.Sc. Thesis Submitted to the University of Agricultural Sciences, Bangalore, India. 2002;161.
4. Gupta L, Tank UN, Dobaria KD. Knowledge and adoption of improved dairying practices. Agricultural Extension Review. 2003;15(1):30-31.
5. Chaudhary H, Panwar JS. Gender based knowledge analysis of milk producers about advanced dairy production technology. Indian Journal of Social Research. 2005;46(3):183.
6. Bardhan D, Dabas YPS, Kumar A. Assessment of farmers' awareness about improved dairy husbandry practices. Indian Veterinary Journal. 2005; 82(1):62-64.
7. Saha B, Gupta J, Das S. Knowledge of clean milk production practices among dairy farmers of West Bengal. Indian Journal of Extension Education. 2003;39 (3&4):230-233.
8. Maity M, Sidhu DS, Basu K, Choudhury AR. Knowledge of farm women towards clean milk production practices. Journal of Dairying Foods & Home Sciences. 2002; 21(2):155-156.
9. Kuhar D, Singh SP. Knowledge of rural women about buffalo housing management practices in Haryana. Haryana Agric. Univ. J. Res. 2006;36: 141-145.
10. Sharma OP, Ruchira S. A study on knowledge of farmers towards sericulture. International Journal of Commerce and Business Management. 2010;3(2):357-358.
11. Narayanaswamy B, Naika R, Nataraj MS. Perception, knowledge and adoption of organic sericulture among the farmers. Madras Agricultural Journal. 2005;92:677-679.
12. NDDB Annual Report 2018-19. National Dairy Development Board, India; 2019.
13. Lindquist EF. Educational measurement. American Council on Education (Ed.), Washington. 1951;1-184.
14. Deepak MP. A study on perception of beneficiaries and non-beneficiaries towards WYTEP programme in Dharwad district (Doctoral dissertation, University of Agricultural Science, Dharwad); 2003.



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