

Factors Influencing Adoption of Scientific Dairy Farming Technologies by Dairy Women Entrepreneurs

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ABSTRACT

Adoption of new dairy farming technologies is always at the centre of policy interest in developing countries. In reality, despite the visible benefits of many new technologies for feeding and management aspect farmers either do not adopt them or it takes a long time to begin the adoption process. Adoption of scientific dairy farming practices by the respondents in dairy enterprise was studied under four heads feeding, breeding, management, and health care. The results revealed that the highest adoption of scientific practices was observed in feeding (76.42%) followed by management (64.25%) and health care practices (53.27%), whereas, the least adoption was observed for breeding practices. The results related to feeding practices revealed that the highest adoption was observed for feeding of concentrate mixture to dairy animals (88.33%) followed by colostrum feeding to the new born calves (87.50%). Comparatively, adoption of feeding of mineral mixture to dairy animals was observed to be poor (61.67%). Moreover, the results for adoption of breeding practices revealed limited adoption by respondents in the study area. It was seen that highest adoption was observed for pregnancy diagnosis (50.83%) and appropriate period of AI after calving. Most importantly, dairy production is becoming more favourable industry and this provides the opportunity to develop their own milk industries, primarily through small scale production, which will have a major impact on different levels of cash income.

Key words: Adoption; Dairy animals; Dairy farming practices; Women entrepreneurs;

Women in India constitute about half of the human resource of the country. Since time immemorial they played a vital role in the socio-economic development of the country. In India their dual role constitute of; producers of goods and services as well as their domestic chores, wives and mothers, yet their contribution to economic development is often not adequately recognized. Women of the present day has extended her foot in every sphere and excelled through the same. They have broken the boundaries restricted to the house-hold work and the prejudice that women are homemaker and that they cannot compete with men. Women despite of inadequate education, proper facilities and with other problems still engage themselves in various activities such as agriculture, livestock rearing, handicrafts, weaving etc and gain additional income for

family. Among the various sources of livelihoods, dairying accounts a greater role and acted as a profitable enterprise for woman (Suchita et al., 2017). Dairy is increasingly being recognized and could play a more constructive role in promoting and supplementing the income and employment generation to the women (Patel et al., 2014). They play an important role in dairy enterprises as manager, decision makers and skilled workers in spite of that, her hard work is mostly unpaid. Women generally contribute more labour inputs in areas of fodder cutting, watering, cleaning of animals and their sheds etc (Chanoria et al., 2019, Paul et al., 2015). The knowledge and skill of women in dairy occupation as well as their participation in day-to-day decision making certainly affects their efficiency, work and development of dairy enterprise in total. It is therefore

felt necessary to determine factors influencing adoption of scientific dairy farming technologies by dairy women entrepreneurs.

METHODOLOGY

Expost facto research design was used for the present study as the phenomena has already occurred. The state had around 5.00 Lakh women led enterprises comprising 5.99% of total women entrepreneurs in India (*Sixth Economic Census, 2014*). This study was conducted in Mathura district of Uttar Pradesh. A total of 120 women entrepreneurs from four randomly selected blocks, selling more than 50.00 per cent of the produced milk for more than 150 days in a year were selected as respondents for the present study. Adoption of scientific dairy practices by the selected women respondents was studied for feeding, breeding, health care and management practices by using adoption index (AI). It is an aggregation of adoption of different dimensions of animal husbandry practices. It can help in identifying the suitable model state for setting the targets while planning for future growth and development. The formula used to measure the adoption level of different aspects of studied dairy farming practices was:

$$\text{Adoption Index} = \frac{\text{Obtained score}}{\text{Maxi. obtainable score}} \times 100$$

The respondents were asked to give their opinion about adoption of these practices on three points continuum i.e., fully adopted, partially adopted and not adopted the practice and the scores of 2, 1 and 0 were allotted for these options respectively. The ranks were allotted to each individual practice on the basis of mean percent scores and adoption score was calculated. The collected data was also analysed by using correlation coefficient by comparing adoption with the independent variables.

RESULTS AND DISCUSSION

Adoption of scientific dairy farming technologies by the respondents in dairy enterprise was studied for feeding, breeding, health care and management practices. The result in Figure-1, revealed that the highest adoption of scientific practices was observed for feeding (76.42%) followed by management (64.25%) and health care practices (53.27%). The least adoption was observed for breeding practices (45.83%). The average

adoption rank score of animal feeding practices was high which was similar to the findings of *Sathisha, 2018*. Similarly *Meena et al., (2014)* stated that that majority of respondents had medium level of perceived needs on breeding, feeding, health care and management.

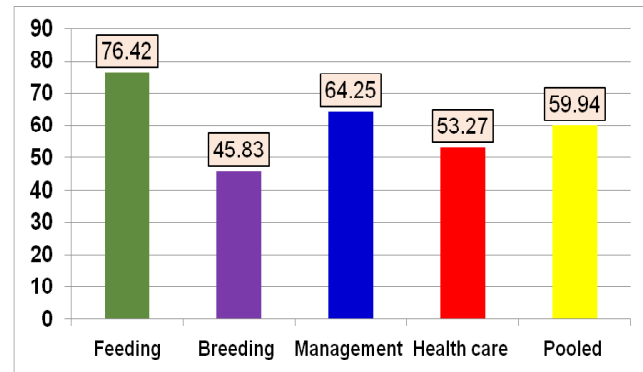


Figure1. Distribution of respondents according to the adoption of scientific practices

The results related to feeding practices (Table1) stated that highest adoption was observed for feeding of concentrate mixture to dairy animals (88.33%) followed by colostrums feeding to the new born calves (87.50%). But the adoption of feeding of mineral mixture (61.67%) was poor by the respondents. High adoption in feeding practices was because of women specific extension activities conducted for the women farmers as various institutes and Krishi Vigyan Kendra tend to diffuse scientific knowledge to farmers. Similar results were also reported by *Ghosly et al., (2016)* and *Suchita et al., (2020)*.

The results related to breeding practices (Table 1) revealed limited adoption by the respondents of the study area. The highest adoption was observed for pregnancy diagnosis (50.83%) which was followed by the appropriate period of AI after calving (49.58%). *Sachan et al., (2016)*, stated that majority of the respondents had always adopted AI practice while, sometimes had observed heat symptoms, pregnancy diagnosis, took help from veterinarians during parturition. Thus, the above results revealed that the extension agencies and State Animal Husbandry department officials should be given due importance to persuade farmers to adopt the improved breeding practices. Mobile AI centre may be established for wider coverage among dairy farmers.

The results on management practices (Table 2) revealed that the maximum adoption was observed for cleaning of utensils (99.58%), cleaning of udder before milking (93.33%) and removing of first two streams

before milking (88.33%). Whereas, the practices viz. age determination through dentition and use of full hand milking were the least adopted practices by the farmers. *Lahoti et al., (2012)* studied the women involvement and found that they were mostly involved in milking of animals (70%), weaning and management of calf (66.66%) and 100.00 per cent involved in care of new born calf and cleaning of animal shed as well as milking utensils.

Table 1. Adoption of scientific dairy farming practices by the women respondents (N=120)

| Variables | WMS | Rank |
|---|-------|------|
| Feeding practices | | |
| Colostrum feeding to new born calves | 87.50 | II |
| Feeding concentrate mixture to dairy animal | 88.33 | I |
| Feeding advance pregnant animal | 76.67 | III |
| Feeding of mineral mixture | 61.67 | V |
| Feeding balanced ration to dairy animal | 67.92 | IV |
| Breeding practices | | |
| Adoption of AI Practices | 36.25 | VI |
| Pregnancy diagnosis | 50.83 | I |
| Help from veterinarian during pregnancy | 46.67 | IV |
| Appropriate period of AI after calving | 49.58 | II |
| Weight of heifers to be considered for breeding | 43.75 | V |
| Insemination of animals(within 12 hours after noticing heat symptoms) | 47.92 | III |

Table 2. Adoption of Management and Health care practices by the women respondents (N=120)

| Variables | WMS | Rank |
|--|-------|------|
| Management practices | | |
| Selection of dairy animals | 50.00 | VIII |
| Age determination through dentition | 40.83 | IX |
| Application of antiseptic to calves | 62.92 | V |
| Deworming in calves | 57.08 | VI |
| Separation of pregnant animals | 64.17 | IV |
| Washing the animal before milking | 51.25 | VII |
| Cleaning of udder before milking | 93.33 | II |
| Use of full hand method of milking | 35.00 | X |
| Cleaning of utensils | 99.58 | I |
| Removing of first two streams | 88.33 | III |
| Timely treatment of sick animals | 62.50 | II |
| Segregation of diseased animals | 99.58 | I |
| Control of ectoparasite infestation | 46.67 | IV |
| Regular deworming of animals | 38.33 | VI |
| Treatment of repeat breeding and anestrus | 48.33 | III |
| Vaccination of animals | 42.50 | V |
| Cutting of naval cord and application of antiseptics | 35.00 | VII |

The results related to health care practices (Table 2) reveals that highest adoption was observed in segregation of diseased animals (99.58%) and timely treatment of sick animals (62.50%). *Sachan et al., (2016)* in her study found that majority of the respondents had adopted segregation of diseased animals suffering from contagious disease and application of pesticides for prevention of ticks and mites.

Pearson's correlation analysis with adoption : The results for correlation between different factors related to women respondents and adoption of scientific dairy farming practices of the dairy animals have been depicted in Table 3. The results revealed that the factors viz., education, family income and milk sale had positive correlations with adoption of scientific dairy farming practices.

Table 3. Correlation between different factors related to women respondents and level of adoption of scientific dairy farming practices (N=120)

| Independent variables | 'r' value |
|-------------------------|-----------|
| Age | 0.057 |
| Education | 0.264* |
| Family Size | 0.039 |
| Land Holding | 0.027 |
| Family income | 0.221* |
| Experience | 0.191 |
| Herd Size | 0.068 |
| Milk production | 0.040 |
| Milk consumption | 0.074 |
| Milk available for sale | 0.235* |

*Significant at 5 per cent level of significance

It was also observed that education of respondents, their family income and quantity of milk sale were significantly ($P < 0.05$) correlated with their level of adoption to the studied scientific dairy farming practices. The study of *Suchita et al., (2020)* also revealed that variables like educational status, operational land holding, milk production, mass media exposure and adoption of improved dairy farming practices had significant influence on the knowledge level of the respondents.

CONCLUSION

The inference drawn from the present study is that the women dairy farmers adopted only few very few of the feeding, health care and management practices scientifically. While adoption level of various breeding practices was poor. Moreover, factors viz. education status of respondents, their family income and quantity

of milk available for sale had significantly positive impact on their level of adoption of various scientific dairy farming practices. The prospectus for dairy production is becoming more favourable due to urbanization and increase in demand of animal protein and this provides the opportunity to develop their own milk industries,

primarily through small scale production, which will have a major impact on different levels of cash income. So this is the right to enter into the market as dairy entrepreneurs with adequate entrepreneurial traits and skills to sustain and strive for excellence in the entrepreneurial arena.

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