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A study on the perceived effectiveness of the pre-dip and post-dip method for teat disinfection and prevention of Mastitis in cows by the farmers in Kanpur Dehat district of Uttar Pradesh

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Abstract

The study was conducted in Kanpur Dehat district of Uttar Pradesh. In the study area, a total of 4 blocks and 5 villages from each block were selected; thus, 20 villages were selected for the present study and from each village, 10 farmers were selected as respondents for the present study. A total of 200 farmers were selected and interviewed with a structured interview schedule in the research study. The findings revealed that the highest degree of agreement was "Pre-dip and post-dip helps in preventing mastitis (91.50%), with a weighted mean score (WMS) of 0.92. More than 89.00 per cent of the respondents found the technology worthy of recommending to other users (WMS = 0.89), while 88.00 per cent of them found it easy to use (WMS = 0.88). More than 85.50 per cent of respondents thought that simplicity of content helped them acquire knowledge (WMS = 0.86). Continued use of the technology in the future received support from 84.50 per cent of the respondents (WMS = 0.85), 79.00 per cent perceived the usage of pre-dip and post-dip disinfectants to be economical (WMS = 0.79); many people (77.00%) perceived themselves to have the necessary skills to apply the technology (WMS = 0.77).

Keywords: Perceived effectiveness, pre-dip and post-dip method, teat disinfection, mastitis, management

Introduction

Mastitis in dairy animals is inflammation of the parenchyma of mammary glands, which is characterised by bacteriological changes in milk, milk production and pathological alteration in glandular tissues. Mastitis is one of the leading diseases of dairy animals that potentially affects farmers' income due to reduction in milk yield, milk discard after treatment, cost of treatment, and premature culling. Mastitis is primarily categorised as clinical or subclinical based on signs and changes in milk quality and quantity in affected cows, and the diagnosis of subclinical mastitis is more difficult than that of clinical mastitis. The time when a dairy animal came in heat, or there is climate variability, subclinical mastitis is converted into clinical mastitis (Saroj *et al.*, 2015) [5]. According to Radostits *et al.* (2007) [4], mastitis is an infection or inflammation of the parenchyma of the mammary gland. It is a bacterial disease

caused by *Streptococcus agalactiae*. The residues of drugs in milk allow the organism to easily transmit to the human population and also create public health issues and economic threats (Kader *et al.*, 2002) [1]. The management and control programme should be focused on the management of mastitis, as faulty management practices favour the pathogens gaining access to the mammary gland and proliferating hugely, potentially leading to mastitis. The incidence of subclinical mastitis is mostly due to several poor management factors (Kumari *et al.*, 2020) [2]. To reduce the disease incidence, it is necessary to assess the management issues which farmers perceived as most effective and useful in maintaining the udder hygiene for the maintenance of dairy animals. The present study aims to find out the perceived effectiveness of the pre-dip and post-dip method for teat disinfection and prevention of Mastitis in cows by the farmers in Kanpur Dehat district of Uttar

Pradesh.

Materials and Methods

The study was conducted in Kanpur Dehat district of Uttar Pradesh in 2024-25. The research study employed a descriptive survey research design to assess the perceived effectiveness of the pre-dip and post-dip methods for teat disinfection among farmers. From the study area, 4 administrative blocks, and from each administrative block, 5 villages were selected. Thus, a total of 20 villages were selected. From each village, 10 farmers who are involved in dairy farming were selected as a sample of the study. A total of 200 farmers were randomly selected for the present study. A well-structured interview schedule was used to collect the data from the respondents. A list of questions on perceived effectiveness was prepared, and asked to farmers to respond to the effectiveness of pre-dip and post-dip methods for teat disinfection. Responses were analysed using the frequency and percentage method, and weighted mean scores of effectiveness were calculated to rank them and prioritise them as the most perceived effectiveness of the pre-dip and post-dip methods for teat disinfection among farmers in the study area.

Results

Perceived effectiveness of pre-dip and post-dip methods for teat disinfection by the farmers

Perception on the effectiveness of pre-dip and post-dip teat disinfection technology was gauged using some of the following statements and measured using frequency and percentage methods. It is evident from the findings that there is a very positive perception towards this technology by the respondents, and this shows its acceptance and

capability of adoption. Among these statements, the one with the highest degree of agreement was, "Pre-dip and post-dip help in preventing mastitis". This is evident from 91.50 per cent of respondents who indicated agreement on this statement. This indicates the strong confidence among farmers in the effectiveness of teat disinfection as a mastitis control measure. In the study area, respondents found this technology very effective in preventing mastitis. The findings revealed that more than 89.00 per cent of the respondents found the technology worthy of recommending to other users, while 88.00 per cent of them found it easy to use. On top of that, more than 85.50 per cent of respondents thought that simplicity of content helped them acquire knowledge. The respondents also reported that the information and guidance related to technology were simple and useful in enhancing their knowledge. Continued use of the technology in the future received support from 84.50 per cent of the respondents, implying high acceptability and sustainability of the technology. Additionally, 79.00 per cent perceived the usage of pre-dip and post-dip disinfectants to be economical, which denotes its economic viability for dairy farmers. Similarly, many people (77.00%) perceived themselves to have the necessary skills to apply the technology. On the other hand, only 19.00 per cent of the respondents feared using pre-dip and post-dip disinfectants on animals, whereas 81.00 per cent did not hold any fears concerning the same. Hence, this statement registered the lowest, implying low fears about the technology among the respondents. The study conducted by several researchers, Patel *et al.* (2025) ^[3], Verma *et al.* (2020) ^[6] and Verma *et al.* (2019) ^[7], in different contexts, found that the majority of the respondents were highly satisfied or found it effective.

Table 1: Perceived effectiveness of pre-dip and post-dip methods for teat disinfection by the farmers

S. No.	Statements	Responses		Responses	
		Yes	%	No	%
1.	Easy to use	176	88.00	24	12.00
2.	Willingness to use the technology in future	169	84.50	31	15.50
3.	Required skills to use pre-dip and post-dip	154	77.00	46	23.00
4.	Pre and post dip helps in preventing mastitis	183	91.50	17	8.50
5.	Afraid to use pre dip and post dip disinfectant for animals.	38	19.00	162	81.00
6.	Usage of pre-dip and post-dip is financially feasible	158	79.00	42	21.00
7.	Simplicity of content in enhancing knowledge	171	85.50	29	14.50
8.	Worth recommending to other users	178	89.00	22	11.00

Ranking of perceived effectiveness of pre-dip and post-dip methods for teat disinfection by the farmers

The results on ranking of perceived effectiveness of pre-dip and post-dip teat disinfection methods revealed that farmers had a highly favourable perception of the technology. The statement Pre-dip and post-dip help in preventing mastitis secured the first rank with the highest score (0.92), indicating that the respondents strongly recognised the effectiveness of teat disinfection in reducing the incidence of mastitis and improving udder health. The statement Worth recommending to other users was ranked second (0.89), suggesting that farmers were satisfied with the benefits of the technology and were willing to advocate its adoption among fellow dairy farmers. The third rank was assigned to Easy to use (0.88), which indicates that the respondents found the procedure simple and convenient to

implement during routine milking operations. The statement Simplicity of content in enhancing knowledge obtained the fourth rank (0.86), reflecting that the information and instructions related to the use of pre-dip and post-dip methods were easy to understand and helpful in improving farmers' knowledge. Willingness to use the technology in future was ranked fifth (0.85), demonstrating the positive attitude of farmers toward continued adoption of the practice. The sixth-ranked statement, Usage of pre-dip and post-dip is financially feasible (0.79), indicates that most respondents considered the technology economically viable and affordable. Similarly, required skills to use pre-dip and post-dip received the seventh rank (0.77), suggesting that the farmers perceived the skill requirements as manageable and not a major barrier to adoption. Afraid to use pre-dip and post-dip disinfectants for animals received the lowest

score (0.19) and was ranked eighth. This indicates that dairy farmers had very little fear or apprehension regarding the safety of disinfectants and generally considered the technology safe for use on dairy animals. Overall, the ranking pattern clearly indicates that respondents perceived pre-dip and post-dip teat disinfection as an effective, practical, safe, and economically feasible mastitis prevention practice. The high scores for mastitis prevention, recommendation to others, ease of use, and future willingness to adopt indicate strong acceptance of the technology among the respondents.

Table 2: Rank of perceived effectiveness of pre-dip and post-dip methods for teat disinfection by the farmers

Rank	Statement	WMS
I	Pre-dip and post-dip help in preventing mastitis	0.92
II	Worth recommending to other users	0.89
III	Easy to use	0.88
IV	Simplicity of content in enhancing knowledge	0.86
V	Willingness to use the technology in future	0.85
VI	Usage of pre-dip and post-dip is financially feasible	0.79
VII	Required skills to use pre-dip and post-dip	0.77
VIII	Afraid to use pre-dip and post-dip disinfectant for animals	0.19

Conclusion

The findings of the study revealed that Pre-dip and post-dip are perceived as most effective methods of preventing mastitis in dairy animals. Worth recommending of pre dip and post dip method for teat disinfection to other users has the second highest rank with weightage mean score of 0.89, and easy to use ranked 3rd with weightage mean score of 0.88. Overall, the study demonstrates that dairy farmers perceive pre-dip and post-dip teat disinfection as an effective, user-friendly, safe and recommended technology for mastitis prevention in the study area.

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