

A COMPARATIVE ANALYSIS OF ADOPTION OF IMPROVED DAIRY PRACTICES AMONG MEMBERS OF URMUL

Reshma Yadav¹, A. K. Jhajharia² and Subhash Chandra³

1 Research Scholar, Department of Agricultural Extension and Communication, Swami Keshwanand Rajasthan Agriculture University, Bikaner - 334006

2 Assistant Professor, Department of Agricultural Extension and Communication, Swami Keshwanand Rajasthan Agriculture University, Bikaner - 334006

3 Professor, Department of Agricultural Extension and Communication, Swami Keshwanand Rajasthan Agriculture University, Bikaner - 334006
Email : reshma1208@gmail.com

ABSTRACT

Agriculture and animal husbandry have a symbiotic relationship, in which the agricultural sector provides feed and fodder for the livestock and animals provide milk, manure and draught power for various agricultural operations. The present investigation was conducted to evaluate the level of adoption of recommended dairy management practices among members and non-members of URMUL dairy cooperative societies in the Bikaner district of Rajasthan. The Uttari Rajasthan Dugdh Utpadak Sahakari Sangh Limited (URMUL), Bikaner, Rajasthan was the locale of the study. URMUL consists six milk collection units. One milk route was selected randomly from each milk collection unit. This way six milk collection routes were selected for the proposed study. Three dairy cooperative societies were randomly selected from each route. Thus, total 18 dairy cooperatives societies were selected. For selection of the respondents, proportionate random sampling procedure adopted. Thus, a total of 300 respondents i.e., 150 members and 150 non- members were selected. The results revealed that the majority of the members (66.67%), non-members (65.34%) of dairy cooperative societies and overall dairy farmers (66.00%) had medium level of adoption about improved dairy practices. More number of members (20.00%) possessed high level of adoption as compared to non-members of dairy cooperative societies (11.33%) about improved dairy practices. This might be due to the fact that the level of education, extension contact and mass media utilization related to the dairy practices. These all lead to the awareness of dairy farmers about new innovative ideas of adoption about improved dairy practices. More number of members (20.00%) possessed high level of adoption as compared to non-members of dairy cooperative societies (11.33%) about improved dairy practices. This might be due to the fact that the level of education, extension contact and mass media utilization related to the dairy practices. These all lead to the awareness of dairy farmers about new innovative ideas.

Keywords: adoption, dairy cooperatives, improved dairy practices, URMUL

INTRODUCTION

Agriculture and animal husbandry have a symbiotic relationship, in which the agricultural sector provides feed and fodder for the livestock and animals provide milk, manure and draught power for various agricultural operations. About 42.3 percent of the Indian population depends on agriculture for their livelihood (Anonymous 2023-24b; Vinaya and Tapan, 2023). Dairy sector is instrumental in bringing socioeconomic transformation in India. Dairying has become a significant secondary source of income for millions of rural families. The total Livestock population of country is 536.76 million in the country showing an increase of 4.82% over 19th Livestock Census- 2012. India has about

15% of livestock population of the world (Anonymous 2019-20). It has presumed the most important role in providing employment and also income generating opportunities especially for women and marginal farmers and also provides improved nutritional benefits. A dairy cooperative business is owned, operated, and controlled by the dairy farmers who benefit from its services. Members finance the cooperative and share in profits it earns in proportion to the volume of milk they market through the cooperative. This paper is based on the premise that dairy farmers under URMUL in Rajasthan face numerous challenges in adoption of improved dairy practices. The study aims to explore these constraints and gain a deeper understanding of the issues faced by dairy farmers in this region.

OBJECTIVE

To find out the extent of adoption of improved dairy practices by members and non-members of dairy cooperative societies.

METHODOLOGY

Area of study was Bikaner district of Rajasthan. URMUL consists six milk collection units namely Bikaner, Lunkaransar, Khajuwala, Chattargarh, Bajju and Dungargarh. All these six milk collection units were selected for the purpose of study. URMUL consists of 49 functional milk collection routes. One milk route was selected randomly from each milk collection unit which have maximum number of registered functional dairy cooperative societies. This way six milk collection routes were selected for the proposed study. URMUL consists of 312 functional Dairy Cooperative Societies (DCSs) out of total 950 registered dairy cooperative societies (Anonymous 2023-24a). Three dairy cooperative societies were randomly selected from each route. Thus, total 18 dairy cooperatives societies were selected. For selection of the respondents from selected 18 cooperative societies, proportionate random sampling procedure adopted to select the respondents who have got the benefits of dairy cooperative societies under URMUL and they called as

members of URMUL. To constitute the other half of sample size, same number of the farmers were also selected randomly from the same milk collection units who have not got the benefits of dairy cooperative societies under URMUL and they called as non-members. Thus, a total of 300 respondents i.e., 150 members and 150 non- members were selected from the selected milk collection units as a sample of the present investigation. Subsequently, a semi-structured interview schedule was designed and used to collect data and then the data was analysed by employing several statistical measures such as mean percent score, rank correlation, z-test etc.

RESULTS AND DISCUSSION

Extent of Adoption of Improved Dairy Practices by Members and Non-members of Dairy Cooperative Societies

The extent of adoption of improved dairy practices among dairy farmers was categorized into low, medium, and high levels based on the mean (64.97) and standard deviation (35.40) of the total adoption score. Respondents scoring below 29.57 were classified as low adopters, those scoring between 29.57 and 100.37 as medium adopters, and those scoring above 100.37 as high adopters. The distribution of respondents is presented in Table 1.

Table 1 Classification of respondents on the basis of their adoption level about improved dairy practices (n=300)

Sr. No.	Adoption Categories	Members of DCSs (n=150)		Non-members of DCSs (n=150)		Overall (n=300)	
		F	%	F	%	F	%
1.	Low level (less than 29.57)	20	13.33	35	23.33	55	18.33
2.	Medium level (from 29.57 to 100.37)	100	66.67	98	65.34	198	66.00
3.	High level (more than 100.37)	30	20.00	17	11.33	47	15.67

Mean= 64.97, S.D.= 35.40, F= Frequency, %= Percentage

The results indicated that the majority of respondents (66.00%) belonged to the medium adoption category. Similar trends were observed among members (66.67%) and non-members (65.34%) of dairy cooperative societies. A higher proportion of members (20.00%) fell under the high adoption category compared to non-members (11.33%), whereas a greater proportion of non-members (23.33%) belonged to the low adoption category. This suggests that cooperative membership positively influences the adoption of improved dairy practices. The present findings are in conformity with earlier studies conducted by Singh *et al.* (2010), Patel *et al.* (2014), Sharma *et al.* (2014) and Kapadiya *et al.* (2022).

Aspect-wise Adoption Level of Improved Dairy Practices

The extent of adoption of six major aspects of

improved dairy practices was measured using Mean Percent Score (MPS). The results for members, non-members, and overall respondents are presented in Table 2.

The results revealed that *Feeding* was the most adopted aspect among members (64.33 MPS), non-members (57.70 MPS), and overall respondents (61.02 MPS). Members of dairy cooperative societies exhibited higher adoption levels across all aspects compared to non-members. The rank correlation coefficient ($r_s = 0.94$) indicated a strong positive and significant agreement between members and non-members regarding the ranking of adoption aspects. The present findings are in conformity with earlier studies conducted by Meena *et al.* (2017), Bhise *et al.* (2018) and Meenia *et al.* (2021).

Table 2 : Aspect-wise adoption level of members and non-members of dairy cooperative societies about improved dairy practices (n=300)

Sr. No.	Aspects	Members of DCSs (n=150)		Non-members of DCSs (n=150)		Overall (N=300)	
		MPS	Rank	MPS	Rank	MPS	Rank
1	Breeds & Breeding	63.00	II	51.17	II	57.08	II
2	Feeding	64.33	I	57.70	I	61.02	I
3	Health care and hygiene	62.33	III	49.23	III	55.78	III
4	Housing	54.00	V	47.23	IV	50.62	V
5	Clean milk production	52.00	VI	45.00	VI	48.50	VI
6	Marketing	56.67	IV	47.00	V	51.83	IV

r_s= Rank correlation, **= Significant at 0.01 level of probabilityr_s = 0.94

t= 5.51**

Aspect-wise Comparison of Adoption Level between Members and Non-members

carried out using mean scores, standard deviation, and Z-test. The results are presented in Table 3.

An aspect-wise comparison of adoption levels was

Table 3: Aspect wise comparison of adoption level of members and non-members of dairy cooperative societies about improved dairy practices (n=300)

Sr. No.	Improved Dairy Practices	Members of DCSs (n=150)		Non-members of DCSs (n=150)		'Z' Value
		Mean±	S.D.	Mean±	S.D.	
1	Breeds & Breeding	12.60	7.33	10.23	8.28	2.73**
2	Feeding	12.87	6.86	11.54	8.07	1.63 ^{NS}
3	Health care and hygiene	12.47	6.80	9.85	9.17	2.94**
4	Housing	10.80	6.87	9.45	7.09	1.78 ^{NS}
5	Clean milk production	10.40	5.97	9.00	6.56	2.03*
6	Marketing	11.33	7.16	9.40	7.80	2.42*

NS= non-significant, **= Significant at 0.01 level of probability, *= Significant at 0.05 level of probability

Significant differences were observed between members and non-members in the adoption of *Breeds and Breeding* and *Health Care and Hygiene* at the 1 per cent level, and *Marketing* and *Clean Milk Production* at the 5 per cent level. No significant difference was found for *Feeding* and *Housing* practices. The present findings are in conformity with earlier studies conducted by Meena *et al.* (2012); Peer (2025); Parmar *et al.* (2025); Rajput *et al.* (2025); Kumawat

et al. (2025); Pandey *et al.* (2024); Patel and Patel (2024); Vinaya and Tapan (2023).

Overall Comparison of Adoption Level

The overall adoption level of improved dairy practices between members and non-members was compared using Z-test. The results are presented in Table 4.

Table 4 Overall comparison of adoption level of members and non-members of dairy cooperative societies about improved dairy practices

(n=300)

Sr. No.	Respondents	Sample size	Mean $\pm$	S.D.	'Z' Value
1	Members	150	70.47	36.85	2.72**
2	Non-members	150	59.47	32.98	

**= Significant at 0.01 level of probability

The calculated Z-value indicated a significant difference between members and non-members, confirming that members of dairy cooperative societies had a higher overall adoption level of improved dairy practices.

The present findings are in conformity with earlier studies conducted by Meena *et al.* (2012), Ram and Meena (2013), Rahman and Gupta (2015) who also reported that the majority of dairy farmers exhibited a medium level of adoption of improved dairy practices.

CONCLUSION

From the above findings, it is concluded that the majority of members (66.67%), non-members (65.34%), and overall dairy farmers (66.00%) belonged to the medium level of adoption category with respect to improved dairy practices. A comparatively higher proportion of members of dairy cooperative societies (20.00%) exhibited a high level of adoption compared to non-members (11.33%), indicating better adoption behavior among cooperative members.

Among members of dairy cooperative societies, the highest level of adoption was observed in the *feeding* aspect (64.33 MPS), which ranked first, while the lowest level of adoption was recorded for *clean milk production* practices (52.00 MPS), ranked sixth. Similarly, non-members exhibited the highest adoption in *feeding* practices (57.70 MPS), ranked first, and the lowest adoption in *clean milk production* practices (45.00 MPS), ranked sixth.

The overall adoption pattern among dairy farmers indicated that *feeding* practices recorded the highest adoption level (61.02 MPS), followed by *breeds and breeding* (57.08 MPS), *health care and hygiene* (55.78 MPS), *marketing* (51.83 MPS), and *housing* (50.62 MPS). The lowest level of adoption among overall respondents was observed in *clean milk production* practices (48.50 MPS).

A statistically significant difference was observed between members and non-members of dairy cooperative societies with respect to the adoption level of improved dairy practices, indicating that cooperative membership positively influenced the adoption behavior of dairy farmers. Thus, the findings underscore the important role of dairy cooperative

societies in enhancing the adoption of improved dairy practices. Strengthening extension efforts, improving access to training programs, and promoting awareness particularly regarding clean milk production and hygienic practices may further enhance adoption levels among both members and non-members of dairy cooperative societies.

RECOMMENDATION

Looking to shortage of time, paucity of funds and manpower at the disposal of researcher, the present investigation was carried out covering a small geographical area with small number of respondents. It is, therefore, suggested that similar research covering large geographic area with a greater number of respondents be conducted so that the results can be generalized for a large area of the state.

1. Micro-level studies could be taken up for in-depth regarding the specific aspects of improved dairy practices.
2. Moreover, similar studies need to be conducted in the different areas of the state so as to draw varied conclusion and suggest future planning for augmenting dairy technology.
3. Comparative studies of improved dairy practices of different districts may be carried out and if possible, a greater number of variables may be studied under this investigation.

A comprehensive study should be under taken to explore all possible factors that might influence the knowledge level of farmers in adoption of improved dairy practices.

ACKNOWLEDGEMENT

I am deeply honored and genuinely delighted to express my heartfelt gratitude to my Major Advisor, Dr. A.K. Jhajharia, Assistant Professor in the Department of Agricultural Extension and Communication, COA, SKRAU, Bikaner. His invaluable guidance, unwavering support, insightful feedback, and sustained encouragement have been instrumental throughout my research journey-from the selection of my research topic to the finalization of my PhD thesis. His dedication and inspiration have been a constant source of motivation during the entire course of this investigation.

CONFLICT OF INTEREST

- The authors had no conflict of interest related to this research.
- The results of the research were not influenced by any funding or financial assistance.
- This work was carried out in an independent and unbiased manner.

- No personal or professional connections had any impact on the study.
- All findings and conclusions are based only on the collected data.

REFERENCES

- Anonymous (2019-20). 20th Livestock Census 2019, Department of Animal Husbandry and Dairying.
- Anonymous (2023-24a). Directory of URMUL Dairy, Bikaner.
- Anonymous (2023-24b) Economic survey Govt. of India, Ministry of Finance, Department of Economic Affairs Economic Division, New Delhi-110001.
- Bhise, R.N., Gaikwad, D.S., Kasal, Y.G. and Kadam, J.R. (2018). Adoption behaviour of dairy farmers about recommended dairy management practices. *Plant Arch.* 18(1):523-530.
- Kapadiya, P.S., Chaudhari, P.N. and Gadariya, M.R. (2022). Adoption level of scientific dairy management practices among livestock owners. *Gujarat Journal of Extension Education.* 33(2):32-37.
- Kumawat, H., Yadav, J. P. and Kumawat, S. (2025) Attitude of farm women towards improved dairy husbandry practices and its association with independent variables. *Gujarat Journal of Extension Education*, 39(2): 157–163. <https://doi.org/10.56572/gjoee.2025.39.2.0026>
- Meena, D.K., Ram, H. and Meena, B.S. (2012). Adoption of improved animal husbandry practices by the members and non-members of dairy cooperative societies. *Ind. J. Dairy Sci.* 65(4):356-358.
- Meena, N.C., Badodiya, S.K. and Biam, K.P. (2017). Extent of adoption of improved animal husbandry practices by dairy farmers of Morar block in Gwalior district. *Ind. J. Ext. Edu.* 53(3):90-93.
- Meena, P., Naberia, S., Naresh, K., Lairenjam, G. and Farooq, F. (2021). Extent of adoption of recommended dairy practices by the dairy farmers in Jabalpur district of Madhya Pradesh, India. *Ind. J. Ext. Edu.* 57(2):246-248.
- Pandey, S., Ponnusamy, K. and Manasa, K. (2024) Adoption level of improved dairy farming practices by resource poor dairy farm households. *Gujarat Journal of Extension Education*, 38(2):59-65. <https://doi.org/10.56572/gjoee.2024.38.2.0010>.
- Parmar, D. V., Ashwar, B. K. and Rajput, M. B. (2025) Adoption of scientific dairy farming practices by ATMA beneficiary and non-beneficiary dairy farmers. *Gujarat Journal of Extension Education*, 39(1): 59–65. <https://doi.org/10.56572/gjoee.2025.39.1.0010>
- Patel, R.N., Patel, V.T. and Prajapati, M.R. (2014). Attitude, knowledge and adoption level of dairy farm women towards dairy farming. *Gujarat Journal of Extension Education.* 25(2):138-139.
- Patel, S. B. and Patel, P. N. (2024) Profile of farm women involved in dairy occupation and their suggestions to overcome the constraints. *Gujarat Journal of Extension Education*, 38(2):111-116. <https://doi.org/10.56572/gjoee.2024.38.2.0018>.
- Peer, Q. J. A. (2025) Constraints perceived by the dairy farmers regarding improved dairy practices. *Gujarat Journal of Extension Education*, 40(2): 14–18. <https://doi.org/10.56572/gjoee.2025.40.2.0003>
- Rahman, S. and Gupta, J. (2015). Knowledge and adoption level of improved dairy farming practices of SHG members and non-members in Kamrup district of Assam, India. *Ind. J. Anim. Res.* 49(2):234-240.
- Rajput, M. B., Ashwar, B. K. and Parmar, D. V. (2025) Relation between characteristics and profitability of dairy farmers. *Gujarat Journal of Extension Education*, 39(2): 43–49. <https://doi.org/10.56572/gjoee.2025.39.2.0008>
- Ram, H. and Meena, B.S. (2013). Adoption of Improved Dairy Farming Practices among Members and Non-members of Milk Co-operative Societies. *Ind. J. Ext. Edu.* 49(1&2):43-45.
- Sharma, R., Sharma, R.A. and Mathur, G.N. (2014). Knowledge and adoption of improved animal husbandry practices by livestock keepers of Dausa district. *Ind. J. Soc. Res.* 55(2):291-297.
- Singh, S., Kumar, R. and Meena, B.S. (2010). Adoption level of scientific dairy farming practices by dairy farmers of Haryana. *Ind. Res. J. Ext. Edu.* 10(3):45-48.
- Vinaya K. Hebsale Mallappa and Tapan B. Pathak (2023). Climate smart agriculture technologies adoption among small-scale farmers: A case study from Gujarat, India. *Frontiers in Sustainable Food Systems*, 7: 1202485. <https://doi.org/10.3389/fsufs.2023.1202485>