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IMPACT OF DAIRY UNION ON DAIRY ENTREPRENEURS

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ABSTRACT

This study focused on the extent of adoption of advanced dairy production technology among members and non-members of dairy cooperative societies. A total of 120 milk producer members and 120 non-members of dairy cooperative societies were selected randomly. Thus, in total 240 respondents were included in the sample of the study. The information was collected through personal interview technique. The results showed that majority of dairy cooperative society members (71.67%) and non-members (64.00%) adopted the advanced dairy production technology to a medium level. Component wise adoption score indicated that in "breeding" the member respondents scored 39.70 per cent whereas, the score of non-member respondents was only 24.30 per cent. Similarly, in "feeding", "health care" and "management" components adoption score of the member respondents was 62.70, 48.60 and 47.40 per cent, respectively, whereas, in case of non-members it was 42.84, 20.30 and 26.80 per cent, respectively. A statistically significant difference was found in level of adoption between members and non-members of dairy cooperative societies regarding all the four practices *viz.* breeding, feeding, health care and management of dairy animals.

INTRODUCTION

With a mission to extend the success of 'AMUL' achieved at Gujarat, 'Anand Model' milk cooperatives were replicated in different states of India under Operation Flood I (1970-1980), Flood II (1980-1985) and Flood III (1986 onwards). It has been emphasized that the agricultural and dairy development is only possible if there is effective co-ordination among education, research, training and extension. The highly successful dairy cooperative societies operating under the Anand pattern have been providing a guaranteed market for milk at a fixed prices, supply cattle feed at a reasonable cost, and regular and efficient veterinary and extension services in the villages (Baviskar, 1988).

The Indian dairy cooperative system is one of the biggest in the world and providing a reliable marketing services to all milk producers irrespective of their class, caste, economy of scale throughout the country and basic dairy extension services such as supply of cattle feed, fodder seeds, animal health services, artificial insemination for both cattle and buffaloes to the members (Sasikumar, 1998). Although serious efforts to transfer the advanced dairy production technology to the farmers have been made yet various studies indicates that dairy farmers have adopted only 30 per cent of the technologies. Therefore, the present study was conducted.

RESEARCH METHODOLOGY

The study was conducted in purposively selected Udaipur district of Rajasthan. The investigation was concerned with "Udaipur Zila Dugdh Utpadak Sahakari Sangh Limited, Udaipur" (Udaipur Dairy Union). The Udaipur Dairy Union consists of 23 milk procurement routes. Out of these, six milk routes were selected randomly. Further two dairy cooperative societies (DCSs) were selected randomly from each identified milk procurement route. To select the milk producer members, simple random sampling technique was adopted. From each selected dairy cooperative society, 10 milk producer members were selected. Thus, a total of 120 milk producer members were selected from 12 dairy cooperative societies. In order to make it a comparative study a sample of 120 non-members of dairy cooperative societies who did not had any linkage with dairy cooperative societies, were taken randomly from distant villages of same milk procurement routes. Thus,

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in total 240 respondents (120 members and 120 non-members of DCSs) were included in the sample of the study. Personal interview technique was used for data collection. To get an in-depth view of extent of adoption among respondents, the practices of advanced dairy production technology were categorized into four major areas viz., breeding, feeding, health care and management practices. Under each major area individual practice wise extent of adoption was worked out. For this purpose mean per cent scores were calculated and ranked accordingly.

RESULT AND DISCUSSION

Level of adoption

Table 1 indicates that majority of DCS members (71.67%) and non- members (64.00%) were in the medium category of adoption of advanced dairy production techniques. It was appreciable that more than 27.00 per cent members of DCSs adopted the advanced dairy production techniques to a high level. It was also noted that 35.00 per cent non-member respondents claimed his adoption to the extent as low in the study area. A wide disparity existed

Table 1: Distribution of respondents on the basis of their level of adoption about advanced dairy production technology **n=240**

S.No.	Adoption level	Members of DCSs		Non-members of DCSs		Total	
		f	%	f	%	f	%
1.	Low (< 17.37)	1	0.83	42	35.00	43	17.92
2.	Medium (17.37-33.11)	86	71.67	77	64.17	163	67.92
3.	High (> 33.11)	33	27.50	1	0.83	34	14.16
	Total	120	100.00	120	100.00	240	100.00

F = Frequency

Table 2: Extent of adoption of breeding practices among members and non-members of dairy cooperative societies **n=240**

S.No.	Adoption level	Members of DCSs (n=120)		Non-members of DCSs (n=120)		Total	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Adoption of cross bred / improved breeds of dairy animals	26.70	6	16.30	4	21.46	5
2.	Watching on oestrus cycle and heat symptoms of dairy animals	82.10	1	78.30	1	80.21	1
3.	Served the crossbred heifers within 15-20 months of age	17.10	7	9.17	6	13.12	7
4.	Practicing the cow served within 60-90 days after calving	42.90	3	23.80	2	33.33	3
5.	Practicing the pregnancy diagnosis between 45-120 days after A.I.	37.50	4	15.40	5	26.46	4
6.	Adoption of A.I. method	27.10	5	4.17	7	15.62	6
7.	Using of improved sire for natural service	44.60	2	22.90	3	33.75	2

MPS =Mean per score.

* Significant at 5 per cent level.

$r_s = 0.79^*$

between members and non-members with regard to adoption of improved dairy production practices. It may be because of the reason that member respondents possessed more knowledge about A.H. practices and have direct contact with personnel of dairy union than non-member respondents.

Extent of adoption

(A) Adoption of breeding practices

Data in Table 2 indicate that member and non-member livestock keepers had maximum adoption about "watching on oestrus cycle and heat symptoms of dairy animals" with mean per cent score 82.10 and 78.30, respectively and assigned rank first by both the categories of respondents. The extent of adoption of "using improved sire for natural service" was 44.60 per cent among members of DCSs and ranked second, while in case of non-member respondents, it was adopted 22.90 per cent and assigned rank third among all the breeding aspects.

The adoption of "AI method" was only 27.10 and 4.17 per cent among member and non-member respondents, respectively. Majority of the respondents usually followed natural service to their animals with local sire. The low adoption in this aspect was due to unavailability of well equipped AI centre/ improved sire in the villages.

The extent of "adoption of crossbred/improved breeds of dairy animals" was 26.70 and 16.30 MPS among members and non-members of dairy cooperative societies, respectively. It was observed during investigation that most of the livestock keepers possessed the local breeds of animals. Similarly, both the categories of respondents were also poor adopters of "crossbred heifers served within 15-21 months of age" with 17.10 and 9.17 per cent, respectively. The poor adoption about this aspect may be due to the reason that very few members and non-members had cross-breed animals.

Table 3: Adoption of feeding practices among members and non-members of dairy cooperative societies

n=240

S.No.	Feeding practices	Members of DCSs (n=120)		Non-members of DCSs (n=120)		Total	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Feeding of colostrum to newly born calves within 2-4 hours of birth	27.50	9	15.40	8	21.46	9
2.	Feeding colostrum continuously to newly born calves up to 5th day of its birth	78.30	2	53.30	4	65.83	2
3.	Feeding concentrate mixture on the basis of milk production	80.00	1	77.10	1	78.54	1
4.	Providing green fodder to animals round the year	59.60	6	53.80	3	56.67	5
5.	Feeding mineral mixture and common salt daily	77.92	3	47.90	5	62.92	3
6.	Using improved practices for fodder production	56.30	7	37.10	6	46.67	8
7.	Conservation of fodders as a silage and hay making	64.60	5	60.00	2	62.29	4
8.	Feeding concentrate to advanced pregnant animals regularly	67.50	4	36.70	7	52.08	7
9.	Chaffing of green/dry fodder	52.50	8	4.20	9	28.35	6

MPS =Mean per cent score.

NS = Non-significant at 5 per cent level.

$r_s = 0.40$ NS

Table further shows that rank order correlation (r--$_s$) value was 0.79, which is positive and statistically significant at 5 per cent level of significance. It infers that there is correlation between ranks accorded to extent of adoption of improved breeding aspects by the members and non-members of dairy cooperative societies.

(B) Adoption of feeding practices

A study of Table 3 shows that member and non-member respondents scored highest in adoption of "feeding of concentrate mixture on the basis of milk production" with MPS 80.00 and 77.10, respectively. The high adoption might be due to the fact that feeding of concentrate mixture directly affects the milk production in dairy animals. Due to this reason the livestock keepers adopted this aspect on priority basis in the study area. The practice "feeding of colostrum to newly born calves within 2-4 hours of birth" was not common as it was adopted by member and non-member respondents with 27.50 and 15.40 MPS, respectively. It was noted that generally livestock keepers had an opinion that first milk after calving was not good to newly born calf for the digestion point of view, that's why poor adoption was observed among both the categories of livestock keepers.

The value of r_s (0.40) was non-significant at 5 per cent level of significance. It means that both the categories of respondents accorded ranks at different magnitude on various feeding aspects.

(C) Adoption of health care practices

Table 4 depicts that maximum adoption was found in case of members about "practicing vaccinations against the contagious diseases to their dairy animals" with MPS 75.50 and ranked first by them. Whereas, non-member respondents had highest adoption about "anthelmintics feeding against internal parasites" with MPS 34.20 and ranked first. Regarding the practice of "shed hygiene measures" it was observed that the adoption level of both the categories of respondents was less, however, the adoption level of member respondents (30.00 MPS) was comparatively higher than the non-member respondents (13.30 MPS).

Similarly, poor adoption level was found for the practice of "burning the dead body of the animal that died of contagious diseases" among the DCS

Table 4: Adoption of health care practices among members and non-members of dairy cooperative societies n=240

S.No.	Health care practices	Members of DCSs (n=120)		Non-members of DCSs (n=120)		Total	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Practicing vaccination against the contagious diseases	75.50	1	4.17	7	39.83	3
2.	Burning the dead body of the animal died of contagious diseases	21.70	7	6.67	6	14.17	7
3.	Deworming of calves for the prevention of parasitic diseases	53.30	3	25.00	4	39.17	4
4.	Treatment of milch animals and anestrus cases by veterinarian	56.70	2	30.40	2	43.54	1
5.	Using pesticides for the prevention and control of external parasites	48.30	5	28.30	3	38.33	5
6.	Anthelmintics feeding against internal parasites	52.90	4	34.20	1	43.54	1
7.	Shed hygienic measures	30.00	6	13.30	5	21.67	6

r_s = 0.072 NS

MPS =Mean per cent score.
NS = Non-significant at 5 per cent level

members and non-members with only 21.70 and 6.67 per cent, respectively. Hence, the table clearly indicates that both the categories of livestock keepers needed to increase the adoption of all the health care practices of dairy animals.

The value of r_s was found to be non-significant at 5 per cent level of significance. Thus, inferences could be drawn that ranks accorded to level of adoption of different health care aspects by DCS members were not similar with the ranks accorded by DCS non-members.

(D) Adoption of management practice

Perusal of table 5 clearly reveals that both members and non-members of dairy cooperative societies scored highest in adoption of "full hand method of milking" with 81.30 and 75.40 MPS, respectively. It means that most of dairy entrepreneurs were following the correct method of milking as per the recommendation of scientists of animal husbandry.

The adoption level of member respondents (56.70 MPS) over "adoption of chaff cutter" was found satisfactory, whereas, in case of non-member respondents the extent of adoption of chaff cutter was negligible (0.42 MPS).

The "castration" and "dehorning" practices of calves were not common in the study area as less number of member respondents (20.80and 13.80 MPS, respectively) were following it. Similarly, non-members were also poor adopters of these aspects with only 7.08 and 9.58 MPS, respectively.

The calculated value of r_s (0.74) shows positive correlation and also found significant at 5 per cent level. This led to the conclusion that there was correlation between the ranks assigned by DCS members and non-members to different management aspects.

Comparison of adoption between members and non-members of DCSs with respect to advanced dairy production techniques

An examination of Table 6 indicates that calculated 'Z' value was greater than its tabulated value at 1 per cent level of significance for all the four major practices of advanced dairy production technology; which leads to conclusion that there had been highly significant difference in level of adoption between members and non-members of DCSs regarding all the four major practices viz. breeding feeding, health care and management of dairy animals.

The findings are in accordance with the results of Verma (2002) who reported that there was highly significant difference between members and non-members of dairy cooperative societies with respect to improved animal husbandry practices.

Table 5: Adoption of management practices among members and non-members of dairy cooperative societies **n=240**

S.No.	Management practices	Members of DCSs (n=120)		Non-members of DCSs (n=120)		Total	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Cleanliness of animal shed	58.30	3	36.30	3	47.29	3
2.	Castration of male calves	20.80	7	7.08	7	13.95	7
3.	Full hand method of milking	81.30	1	75.40	1	78.33	1
4.	Dehorning of calves	13.80	8	9.58	6	11.66	8
5.	Providing clean and fresh water for animal drinking	79.60	2	51.30	2	65.41	2
6.	Use of wallowing tanks for bathing of buffaloes during summer	25.40	6	12.10	5	18.75	6
7.	Adoption of chaff cutter	56.70	4	0.42	8	28.54	5
8.	Weaning practices for calf	43.30	5	22.50	4	32.92	4

$r_s = 0.74$*

MPS =Mean per cent score.

* = Significant at 5 per cent level

Table 6: Comparison of adoption between members and non-members of DCSs with regard to different advanced dairy production techniques n=240

S.No.	practices	Members of DCSs (n=120)		Non-members of DCSs (n=120)		'Z' Value
		Mean	±SD	Mean	±SD	
1.	Breeding	5.56	1.78	3.40	1.68	9.68**
2.	Feeding	11.30	2.48	8.71	2.38	8.21**
3.	Health care	6.81	2.37	2.84	2.27	13.30**
4.	Management	7.58	1.84	4.29	1.52	15.10**

** Significant at 1 per cent level.

CONCLUSION

More than seventy per cent members and sixty four per cent non- members of dairy cooperative societies were adopted the advanced dairy production technology to a medium level. Component wise adoption score indicated that the member respondents scored 39.70 per cent whereas; the non-member respondents scored only 24.30 per cent in "breeding" practices. Similarly, in "feeding", "health care" and "management" components, the adoption score of the member respondents was comparatively higher than the non-members. A statistically significant difference was found in level of adoption between members and non-members of dairy cooperative societies regarding all the four practices *viz.* breeding, feeding, health care and management of dairy animals.

On the basis of adoption pattern of the respondents in different practices, it could be concluded that impact of Udaipur Dairy Union on the adoption of advanced dairy production technology was significant and positive, but still there is an urgent need to improve the adoption level of both the categories of dairy farmers in the study area.

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