A study on differential Adoption and Constraints of Dairy Farmers about Scientific Dairy Farming Practices in Amritsar district of Punjab

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Abstract

In the present study, practices adopted and constraints perceived in scientific dairy farming by KVK trained dairy farmers were compared with non-trained dairy farmers. Hundred trained and hundred non-trained dairy farmers were selected by random sampling technique from the villages of Amritsar district of Punjab. The data were collected through personal interview with the help of a structured interview schedule. The trained farmers were found to have better adoption than non-trained farmers. The respondents faced more constraints in breeding, feeding and health care. Some of the major constraints mentioned by the respondents were poor conception rate, lack of knowledge of common contagious diseases, their causes and control measures and non availability of mineral mixture in the study area. The present investigation concluded that the training programme on scientific dairy farming had a positive impact on adoption of technologies by dairy farmers despite many constraints.

Keywords: Dairy farming, Constraints, Artificial Insemination, Mineral mixture

With the advent of new technologies in the field of dairy science, a manifold increase in milk production has been achieved, however there is a need to follow improved technologies in order to meet the growing demand for milk and to minimize technological gaps. (Sharma and Bairathi, 1999). To bridge these gaps, extension functionaries are conducting suitable training programmes to impart technical know-how to the dairy farmers. This necessitates evaluating the level of adoption and the constraints faced by them in adopting these scientific technologies. It has been well documented that an overall development in the agricultural and dairy sector is only possible, if there is effective co-ordination among education, research, training and extension. Although serious efforts have been made to transfer the scientific dairy farming practices to the farmers, yet various studies have indicated that adoption of these technologies is up to 30 per cent, predominantly by resourceful farmers. This implies the need to transfer

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the developed technologies to the resource poor marginal and small farmers and landless labour who rear animals to augment their income through selling of surplus milk. It is emphasized that imparting suitable training in scientific dairy farming practices will enhance the adoption rate of technologies by resource poor farmers. India has the potential to meet the growing demand for milk for which there is a need to adopt and follow scientific dairy farming technologies. This is possible only if the dairy farmers are trained constantly so as to develop a desired level of knowledge and skills on scientific dairy farming. The present study was carried out with the specific objectives to study the differential level of adoption of scientific dairy farming practices and to identify the constraints faced by dairy farmers in adoption of those practices.

Methodology

The present study was carried out in Amritsar district, the operational area of Amritsar KVK of Punjab state. The respondents' sample constituted trainees of on-campus training programmes on scientific dairy farming as well as non-trained dairy farmers from the same area.

A sample of twenty five villages covering five blocks *viz.* Ajnala, Chogawan, Majitha, Harsha Chinna and Verka were selected purposively. For selection of respondents, four KVK trained dairy farmers were selected randomly from each village. From the same villages four non-trained dairy farmers with similar socioeconomic conditions were also selected randomly. Thus the total number of respondents were 200, consisting of 100 trained and 100 non-trained dairy farmers. The data were entered in a well structured schedule by personally interviewing the farmers. The data were then compiled, tabulated and analyzed using appropriate statistical methods. In the present study, adoption was operationalized as the actual use of innovation regarding dairy farming (Roger and Shoemaker, 1971). Adoption was measured by three point continuum scale, *viz.*, 'continuous', 'occasional' and 'never tried' with respective scores 2, 1 and 0 (Sah, 1996). Constraints are the circumstances or the causes which prohibit the dairy farmers from adoption of improved management practices (Rathod *et al.*, 2011). In this study, constraints were operationalized as certain obstacles or problems perceived and experienced by the dairy farmers in adoption of scientific dairy farming practices. A three point continuum scale *viz.*, strongly agree, agree and disagree, with respective scores of 2, 1 and 0 was used to measure the constraints and these were ranked according to the total scores.

Results and Discussion

Adoption of Scientific Dairy Farming Practices

Association between knowledge and adoption of scientific dairy farming practices is well understood. Knowledge augmentation has been identified as the first step towards attaining higher adoption of scientific dairy farming practices. The adoption was considered appropriate to determine the extent to which the training imparted has been applied in the field, since the ultimate purpose of knowledge acquired by the farmers is its implementation at their field. The results given in Table 1 shows the practice wise adoption of scientific dairy farming practices. More than 85 per cent of the trainees adopted A.I and pregnancy diagnosis promptly. None of the trained farmers gave "Never" response to breeding practices. In the non-trained farmers' group, the adoption levels for A.I and pregnancy diagnosis were 65 and 62 per cent respectively. Four and ten per cent were "Never tried" responses which were given by the non-trained farmers for A.I and pregnancy diagnosis respectively. Similar responses with higher adoption from trained farmers were recorded in feeding, healthcare and management practices in comparison to non-trained group which is evident from Table 1.

Table 1. Adoption of Scientific Dairy Farming Practices by Dairy Farmers

Sr. No.	Practices	KVK trained dairy farmer			Non-trained dairy farmer		
		Continuous (2)	Occasional (1)	Never tried (0)	Continuous (2)	Occasional (1)	Never tried (0)
1.	A.I. in cows	86 (86.00%)	14	0	65	31	4
2.	Pregnancy diagnosis	88	12	0	62	28	10
3.	Vaccinating dairy animals against contagious diseases	98	2	0	90	8	2
4.	Feeding colostrum to calves within half an hour of its birth and continuing up to first 5 days	87	13	0	72	25	3
5.	Disinfecting cattle shed periodically	98	2	0	78	20	2

6.	Growing either Legume/Non-legume or mixed fodder crops	98	1	1	88	10	2
7.	Incorporating mineral mixture in the animal ration	87	13	0	60	25	15
8.	Practicing deworming in calves for prevention of internal parasites	60	25	15	57	27	16
9.	Dehorning of crossbreed calf	78	12	10	68	16	16

Adoption level of trained dairy farmers was significantly higher than those of non-trained dairy farmers (Table 2). The increased score of adoption in trained dairy farmers may be attributed to the knowledge enrichment of the dairy farmers from the training imparted by KVK. Sabapara *et al,* (2014) observed that education of dairy animal owners had highly significant and positive correlation with knowledge about improved dairy husbandry practices. The results of this study are also in line with the findings of Kumar *et al,* (2009), Sharma *et al,* (2009), Satyanarayan and Jagadeeswari (2010) and Shekhawat *et al, (*2013).

Table 2. Comparison between Adoption Level of ex-trainees and non-trainees

Groups	Mean score	Standard Deviation (S.D.)	Difference between two means	Calculated 't' value
Trained dairy farmers	16.49	2.93	1.79	3.17*
Non-trained dairy farmers	14.70	4.83		

*Significant at 1% level

Constraints faced by Trained Dairy Farmers in Adoption of Scientific Dairy Farming Practices

The constraints faced by trained dairy farmers in adopting scientific dairy farming are listed in Table 3. Poor conception rate was found to be the first major constraint in adoption of breeding practices whereas insufficient services at A.I centers and demanding money for A.I are the next constraints in the adoption of these practices. Singh *et al,* (2015) revealed that low economic gains and non-availability of adequate veterinary services were the major constraints in adoption of improved breeding practices. The results are in agreement with the findings of

Dabas *et al*, (2004) and Rathod *et al,* (2011). Non-availability of mineral mixture was ranked first, high cost of mineral mixture and high cost of compound feed were second and third constraints faced in adoption of scientific feeding practices. These results are in conformity with the findings of Rani *et al,* (2013) and Singh *et al,* (2015). Lack of knowledge on common contagious diseases, its causes and control measures was ranked first under health care constraints followed by ignorance of vaccine utility as prophylactic measures against contagious diseases and the distant medicine market. The first major constraint in adopting animal management practices was poor education about modern dairy husbandry practices. Lack of resources for housing and lack of knowledge on cheap and scientific housing were second and third constraints being experienced. Similar findings were reported by Dubey *et al,* (2012).

Table 3. Constraints faced by the Trained Farmers in Adoption of Scientific Dairy Farming Practices

Sr. No.	Constraints	Mean Percent Score (MPS)	Rank
A	**Breeding**		
i)	Poor conception rate of A.I.	88.5	I
ii)	Inefficient services at A.I. centres	62.0	II
iii)	Demanding money for doing A.I. in addition to prescribed fee	44.0	III
B	**Feeding**		
i)	Non-availability of mineral mixture	85.5	I
ii)	High cost of mineral mixture	81.5	II
iii)	High cost of compound feed	80.0	III
C	**Health care**		
i)	Lack of knowledge on common contagious diseases, its causes and control measures	86.5	I
ii)	Ignorance of vaccine utility as a prophylactic measure against contagious diseases	73.0	II
iii)	Medicines available at distance	56.0	III
D	**Management**		
i)	Poor education about modern dairy husbandry practices	74.0	I
ii)	Lack of resources for providing scientific housing	58.5	II
iii)	Lack of knowledge on cheap and scientific housing of animals	53.0	III

The major constraints in adoption of scientific dairy farming practices by non-trained dairy farmers are grouped in Table 4.

Table 4. Constraints faced by the Non-trained dairy farmers in adoption of scientific dairy farming practices

Sr. No.	Constraints	Mean Percent Score (MPS)	Rank
A	**Breeding**		
i)	Poor conception rate of A.I.	89	I
ii)	Inefficient services at A.I. centres	55	II
iii)	Preference to natural service than A.I.	42	III
B	**Feeding**		
i)	Non-availability of mineral mixture	85	I
ii)	High cost of mineral mixture	79.2	II
iii)	High cost of compound feed	75.5	III
C	**Health care**		
i)	Lack of knowledge on common contagious diseases, causes and control measures	87	I
ii)	Ignorance of vaccine utility as a prophylactic measure against contagious diseases	71.5	II
iii)	Medicines available at distance	62.5	III
D	**Management**		
i)	Poor education about modern dairy husbandry practices	72.5	I
ii)	Lack of resources for providing scientific housing	63.5	II
iii)	Lack of knowledge on cheap and scientific housing of animals	55.5	III

Similar to trained farmers, Poor conception rate of A.I. was ranked the first major constraint. Insufficient services at A.I centres and preference to natural service than A.I were the second and third constraints respectively. Regarding feeding practices, the major constraints observed were non-availability of mineral mixture followed by high cost of mineral mixture and high cost of compound feed. Narmatha *et al.*, (2010) also found high capital demand as a major constraint in adoption of scientific dairy practices. Similar ranks with respect to different constraints regarding health care and management practices were reported by the non-trained dairy farmers as revealed by trained dairy farmers. Singh *et al.*, (2015) reported that inadequate A.I facilities, high price of concentrate mixture, lack of resources for housing and inadequate veterinary services are the major block in adoption of dairy husbandry practices which corroborate our findings.

Conclusion

This study concludes that there was a statistically significant difference between trained and non-trained dairy farmers in adopting scientific dairy farming technologies. There are many technologies which are not yet tried by dairy farmers.

This could be considered as a great opportunity and wide scope for scientists to know reasons behind both active and passive adoption, as well as for extension workers to disseminate technologies. The constraints experienced by the trained farmers were the poor conception rate of A.I., non-availability of mineral mixture in the area, lack of knowledge on common contagious diseases, its causes and control in adoption of scientific dairy farming practices. The non-trained farmers also revealed that poor result of A.I., lack of knowledge on common contagious diseases, their causes and control measures and non-availability of mineral mixture were the major constraints. Thus, the constraints encountered in this study should be dealt by extension functionaries effectively so that the improved technologies could be disseminated among dairy farmers. Hence, suitable training programmes have to be conducted to impart technical knowledge and skills among the dairy farmers on scientific dairy farming practices.

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