J Krishi Vigyan 2022, 10 (2) : 6-11 DOI : 10.5958/2349-4433.2022.00002.2

Adoption, Learning and Enhancement of Knowledge of Dairy Farming Practices: An Impact Assessment

Rajesh Kumar Chander[1] and Ram Chand#

Department cum Centre for Women's Studies & Development, Panjab University, Chandigarh.

ABSTRACT

Agriculture in varied forms is practiced as mixed farming in combination with livestock which has, so far, been supplementing farmers income tremendously. To enhance the productivity of milk further, training and development of trainees are extremely pivotal. This paper discusses the comprehensive feedback of 270 ex-trainees who had participated in the 15 days specialized training at 8 different dairy training extension centers, which was studied through a structured interview schedule, perception survey and likert scale, etc. Before the collection of data, the interview schedule was pre-tested. After participating in the said training, majority of the respondents witnessed an excellent level of gain in knowledge regarding various dairy farming practices, for instance, had adopted production of clean milk techniques (78.51%), balanced feeding (75.18%) and deworming (72.59%), and had also exhibited good level of retention of knowledge of dairy practices. About half of the respondents were highly satisfied with the management of the training and, the timings of the training were well managed by the trainers.

Key Words: Adoption, Development, Learning, Productivity, Retention, Women Empowerment.

INTRODUCTION

Livestock are the domesticated animals mainly contributing income to the farmers and act as a catalyst to the rural economy. The total livestock population is 536.76 M in the country showing an increase of 4.8 per cent in comparison to the earlier livestock census, conducted in the year 2012 (20th Livestock Census Report, 2019). As per some estimates, livestock contributes more than a quarter of the total contribution to the agricultural sector. In the year 2018-2019, the milk production was 187.7 Mt and the per capita availability was 394 g/d. Sharma (2020) reported that landless category of farmers obtained the minimum wet average (4.27 L/d) and herd average (2.78 L/d) contrary to the large farmers having land holding of more than 4 hectare area where wet average and herd average were 9.09 and 6.17 L/d, respectively. Therefore, depending on the feeding management practices followed, there was a difference in the milk yield obtained.

To achieve the goal of higher milk production, there is a dire need to actively involve a large number of dairy farmers in various extension and dairying programmes. In this context, the trainers had framed suitable needs-based content, using suitable training methods/techniques aimed at providing knowledge and skills required for improvement in the overall performance of the trainees. Off the job training has become significant in global pandemic, as training takes place from a faraway place from the workplace, and often utilizes methods/techniques like conferences, lectures, workshops, webinar, case studies, role playing, and simulation, etc. The feedback received helped in retention of knowledge, enhanced adoption and the pertinent inputs received from the ex-trainees, strong linkage was established between the trainers and the trainees. The objectives of the study were to examine the socio-economic background of the respondents, gender-wise, and the rating of training by the respondents and the level of retention of

Corresponding Author's Email: rajesh2976@rediffmail.com

[1] Assistant Professor # Former ADG (K.V.K.-I.C.A.R.), New Delhi

Table 1. Socio-Economic Background of the Ex-Trainees. (N=270)

Sr. No	Variable	Category	Number (Percent)
1.	Age	19-35	127 (47.03)
		35-50	104 (38.51)
		>50	39 (14.46)
2.	Qualification	Up to 8th	204 (75.55)
		Matric	43 (15.93)
		Graduate	23 (8.52)
3.	Gender	Men	222 (82.22)
		Women	48 (17.77)
4.	Type of Family	Joint	176 (65.18)
		Nuclear	94 (34.82)
5.	Number of Family members	Up to 5	149 (55.18)
		5-10	112 (41.48)
		>10	09 (3.34)
6.	Marital Status	Married	168 (62.22)
		Unmarred	102 (37.78)
7.	Main Occupation	Dairying	218 (80.74)
		Agriculture	52 (19.25)
8.	Herd Size	Small	137 (50.75)
		Medium	92 (34.07)
		Large	41 (15.18)
9.	Caste	General	150 (55.55)
		SC	67 (24.81)
		OBC	53 (19.64)

Source: Field Survey. **The figures in the parenthesis indicate percentages.*

knowledge in post-training follow-up.

MATERIALS AND METHODS

The Dairy Development Department of Punjab has 8 Dairy Training Extension centres, located at Abul Khurana (Muktsar), Verka (Amritsar), Chatamli (Ropar), Gill (Moga), Bija (Ludhiana), Phagwara (Kapurthala), Sardulgarh (Mansa) and Tarn Taran. The list of ex-trainees who had undergone 15 days training was obtained from each training centre and around 33 ex-trainees were selected randomly from seven training centres, and 39 trainees from the most populated district of Punjab, i.e., Ludhiana was taken; and, making it a total sample of 270 ex-trainees. The training was conducted by subject experts, primarily men, from agricultural universities in the above mentioned centres. Furthermore, the study has used both the primary and secondary data. The respondents were asked to rate the adoption, training, and gain in

Table 2. Extent of Level of Adoption of Various Dairy Farming Practices (N=270)

Sr. No.	Adoption of Dairy Practices	Fully	Partially	Not at all
1.	Feeding of Green Fodder	187 (69.25)	59 (21.85)	24 (8.88)
2.	Production of Clean Milk	212 (78.51)	45 (16.66)	13 (4.81)
3.	Feeding of Mineral Mixture	179 (66.29)	51 (18.88)	40 (14.81)
4.	Deworming	196 (72.59)	61 (22.59)	13 (4.81)
5.	Balanced Feeding	203 (75.18)	47 (17.40)	20 (7.40)
6.	Rearing of Heifers	191 (70.74)	45 (16.66)	34 (12.59)
7.	Revamping of Cattle Shed	145 (53.70)	72 (26.66)	53 (19.62)
8.	Selling Milk to Cooperative Society	144 (53.33)	76 (28.14)	50 (18.51)
9.	Processing of Milk products	115 (42.59)	61 (22.59)	94 (34.82)

Source: Field Survey. **The figures in the parenthesis indicate percentages.*

knowledge of dairy practices.

RESULTS AND DISCUSSION

It was revealed that 47.03 per cent of the respondents were in the age group of 19-35 year, 38.51 per cent in the age bracket of 35-50 year followed by 14.46 per cent above 50 years of age. It was inferred that more than half of the ex-trainees were young or middle-aged. As far as their educational profile was concerned, a majority (75.55%) of the respondents was educated up to the middle level (eighth standard), followed by 15.93 per cent matriculate and lastly 8.52 per cent graduates. Regarding the gender composition of the respondents, a majority of the respondents were men (82.22 %), and women (17.77 %). The women beneficiaries can be empowered by imparting them training programmes, demonstrations, etc. (Udgata et. al., 2021).

As far as the type of family is concerned, 65.18 per cent respondents belonged to joint families and 34.82 per cent belonged to the nuclear families. 55.18 per cent respondents' family size comprised of 0-5 family members, followed by 41.48 per cent of 5-10 family members, and 3.34 per cent had more than 10 family members. It was also inferred that 62.22 percent respondents were married, and 37.78 percent were unmarried. As high as 80.74 per cent of the ex-trainees were engaged in dairying as their main occupation, and 19.25 per cent were engaged in agriculture. Almost half (50.75%) of the respondents were rearing small herd, and 34.07 per cent were keeping medium herds, and only 15.18 per cent were keeping large herds. Regarding their social background, it was observed that 55.55 per cent respondents belonged to general category, 24.81 per cent were belonging to scheduled caste category, and 19.64 per cent respondents belonged to OBC (Other Backward Castes).

The data (Table 2) indicated that 69.25 per cent trainees had fully adopted the feeding of green fodder, while 21.85 per cent trainees had partially adopted the feeding of green fodder, and, lastly, 8.88 per cent had not adopted this practice. The feeding of the green fodder is to be encouraged as it is cheaper in price. As far as production of clean milk was concerned, a large majority (78.51%) had fully adopted the practice, followed by partially adopted (16.66%), and further followed by 4.81 per cent who had not adopted this practice, at all. The majority of the trainees were adopting the dairying practices like balanced feeding (75.18%), deworming (72.59%), rearing of heifers (70.74%), feeding of mineral mixture (66.29), revamping of the cattle shed (53.70%), followed by selling milk to cooperative society (53.33%), and the processing

Table 3. Rating of Quality of Learning by the Ex-Trainees. (N=270)

Sr. No	Quality of Learning	Very High	High	Less	Low	Very Low
1.	Content of the Training modules	138 (51.11)	104 (38.51)	24 (8.88)	3 (1.11)	1 (0.37)
2.	Choice of Resourcepersons	149 (55.18)	94 (34.81)	23 (8.51)	2 (0.74)	2 (0.74)
3.	Time Management	183 (67.77)	64 (23.70)	16 (5.92)	6 (2.22)	1 (0.37)
4.	Quality of Lectures Delievered	173 (64.07)	69 (25.55)	24 (8.88)	4 (1.48)	0 (0.00)
5.	Use of Audio-Visual Aids	168 (62.22)	59 (21.85)	28 (10.37)	10 (3.70)	5 (1.85)
6.	Level of Overall Satisfaction	139 (51.48)	82 (30.38)	31 (11.48)	14 (5.18)	4 (1.48)

Source: Field Survey. **The figures in the parenthesis indicate percentages.*

of milk products (42.59%), etc. The question for further research on this area could be, why there is less adoption of dairy practices in the case of processing of milk products (34.82%), revamping/ improvement of cattle shed (19.62%) and selling milk to cooperative society (18.51%), etc.

In Table 3, the summary of rating of the quality of the learning from the training imparted was depicted, employing six different criterions. As far as the content of the training modules was concerned, 51.11 and 38.51 per cent respondents rated it as of very high and high quality respectively. It was also observed that the content of the training modules had raised the level of learning and, 55.18 and 34.81 per cent respondents rated choice of resource persons / subject-experts as very high and high respectively. It was also reported that 67.77 percent respondents reported that time management of training was well managed. Furthermore, 62.22 per cent respondents had very highly appreciated the usage of audio visual aids in teaching-learning situations. It was also interpreted that 51.48 per cent of the respondents were very highly satisfied with the overall quality of the training imparted. Furthermore, a study undertaken earlier also has corroborated that majority of the respondents were highly satisfied with the dairy training programmes undertaken (Chand, 2005).

The data (Table 4) summarizes the extent of gain in knowledge of the trainees; 59.62 per cent of the respondents had an excellent increase in knowledge as far as balanced feeding was concerned. Almost 56.66 per cent respondents opined that there was an excellent increase in the dairying practice of feeding of green fodder. It was concluded that 55.55 and 22.22 per cent respondents had excellent and very good increase in knowledge related to cattle shed management. In production of clean milk, 60 per cent respondents had an excellent increase. There was an excellent and very good increase in knowledge of dairying practices as, awareness regarding dairying schemes (65.18%), rearing of heifers (55.92%) and accessibility to bank loans (48.88 %), was observed. The respondents opined that the principle of learning by doing and seeing is believing, may be followed. In general, women have a good perception about the dairy enterprise

Table 4. Perceptions regarding Extent of Gain in Knowledge of various Dairying Practices. (N=270)

Sr. No	Dairying Practices	Excellent	Very Good	Good	Average	Below Average
1.	Balanced Feeding	161 (59.62)	75 (27.77)	18 (6.66)	10 (3.70)	6 (2.22)
2.	Feeding of Green Fodder	153 (56.66)	85 (31.48)	30 (11.11)	2 (0.74)	0 (0.00)
3.	Management of Cattle Shed	150 (55.55)	60 (22.22)	41 (15.18)	14 (5.18)	5 (1.85)
4.	Clean Milk Production	162 (60.00)	84 (31.11)	16 (5.92)	3 (1.11)	5 (1.85)
5.	Rearing of Heifers	151 (55.92)	65 (24.07)	37 (13.70)	13 (4.81)	4 (1.48)
6.	Access to Bank loans	132 (48.88)	86 (31.85)	36 (13.33)	9 (3.33)	7 (2.59)
7.	Awareness of Dairy Schemes	176 (65.18)	62 (22.96)	28 (10.37)	3 (1.11)	1 (0.37)

Source: Field Survey. **The figures in the parenthesis indicate percentages.*

(Asha et. al, 2021).

CONCLUSION

India has the world's largest livestock population and is the world's largest milk producer. However, the average productivity per animal per day in India is around four litres, which is much lower than countries like New Zealand and Australia, where it is around 20-25 litres per day per animal. The study revealed that the majority of the respondents were educated up to eighth class and were married. The rating of training was high in time management, quality of lectures and use of audio-visual aids. The majority of the ex-trainees adopted clean milk production, balanced feeding, deworming and rearing of heifers. More than half of the respondents gained knowledge in breed management, clean milk production and balanced feeding. The findings and feedback received will act as guidelines for the trainers while re-planning training programmes for better performance, in future. Some policy suggestions are timely allocation of dairy loans by banks, providing dairy subsidies by dairy development department, more practical classes in training course content, visit to selected progressive dairy farms, online lectures by subject experts (especially during Covid-19 pandemic), maintenance of digital record, dissemination of the material, follow-up of the contact with ex-trainees, provision for more women trainers for their empowerment, to encourage more participation of women in training programmes, avenues for self-employment, social inclusion, etc (Chander, 2019). To summarize, training is a critical input as dairy innovations are becoming more sophisticated and cost intensive and, finally, the dairy extension centres may be rechristened as Dairy Skill Development extension centres. As dairying has emerged as a requisite component of rural India and, especially for small and marginal farmers as well as the landless; henceforth, it can act as a catalyst for rural and inclusive development.

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Received on 03/08/2020 *Accepted on 27/01/2022*