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Research Article

ROLE OF TRAINING IN CHANGING KNOWLEDGE LEVEL AMONG DAIRY FARMERS OF PUNJAB

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ABSTRACT

To study the role of training in changing knowledge level, 138 farmers were interviewed with a pre-tested questionnaire before the start and after completion of training. The study revealed that 8.7%, 30.4% and 48.5% respondents were educated upto primary, matric and above matric level, respectively whereas 12.5% trainees were graduates. Only 4.4 % of the farmers belonged to high level knowledge category before training whereas 81.9% (P<0.01) of farmers were in this category after training. The awareness perceived by farmers about feeding, reproduction and disease management was significantly (P<0.05) higher after training. About 12.6±0.18 and 26.0±0.16 responses of farmers were found correct before and after training, respectively. Education only affected the knowledge level of farmers regarding breeds of buffalo and cow where correct responses were significantly higher (P<0.05) for graduate farmers as compared to under matric ones. Therefore, it may be concluded from the present study that trainings play an effective tool to improve the knowledge and understandability of farmers about dairy farming.

Key words: Dairy farmers, knowledge level, trainings, Punjab

Punjab is an agrarian state and rice-wheat crop system is generally followed which has not only attained its potential but has also led to depletion of soil and water reserves of the state. Hence, there is an urgent need to diversify this crop system. Livestock rearing is considered viable options for diversifying the agricultural economy and can play an important role in the economic development of the state. In general, rural economic development refers to a process of upward changes of human resources which can be improved through increasing knowledge and attitude level of the rural stakeholders (Kumar *et al.,* 2013). Further, knowledge level and attitude of farmers towards livestock rearing can be improved through training. Training is an integral and crucial input for the human resources development in all walks of life, be it agriculture or animal husbandry to bring out desirable changes in human behaviour (Biswas *et al.,* 2008).

Farmer training is a non- formal process of education to train the farmers on some specific topic at a particular place. Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana regularly organizes trainings to educate the unemployed youth, farmers and farm women of Punjab and neighboring states about profitable dairy farming. Success of such trainings will depend upon the extent of increase in farmers' knowledge and understanding about technical aspects of dairy farming. This article presents the results of a study conducted to assess the effectiveness of trainings in improving the knowledge level of dairy farmers in Punjab.

MATERIALS AND METHODS

The present study was conducted on the trainees from all over the Punjab who attended the specialized trainings on dairy farming organized by GADVASU, Ludhiana during 2014. Farmers (n=138) were interviewed with a pre-tested questionnaire. All the farmers were imparted two weeks training on dairy farming through lectures, multimedia teaching aids, practical demonstrations and exposure visits at modern dairy farms and re-assessed their knowledge after completion of training. A set of 30 knowledge based items, containing information on different aspects of dairy farming which was obtained from book 'Dairy Farming' published by GADVASU, Ludhiana (Gill *et al.,* 2008) and by consultation with experts, were presented to the respondents. Each correct response was given a score of one. Respondents were categorized into three groups (Chandrashekhar *et al.,* 1998) based on the mean (19.3) and standard deviation (8.3) as a measure of check. If total score on knowledge was less than (Mean–½ S.D.), between (Mean±½ S.D.) or more than (Mean+½ S.D.), the knowledge category was Low, Moderate, High, respectively.

The information about independent variables viz.

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age and education was collected with the help of a structured schedule and scales. The data were analyzed by ANOVA (Snedecor and Cochran, 1994) by using the software package SPSS version 16 (SPSS, 2007) and differences in mean were assessed by using Turkey b to draw inferences.

RESULTS AND DISCUSSION

The study revealed that 8.7%, 30.4% and 48.5% respondents were educated upto primary, matric and above matric level, respectively whereas 12.5% trainees were graduates. The data regarding knowledge level of farmers about dairy farming (Table 1) revealed that 69.6%, 26.0% and 4.4% farmers belonged to low, moderate and high level knowledge category before training, respectively. However, 81.9% (P<0.01) farmers possessed high level knowledge after training (Table 1) which indicated that training on dairy farming was effective in improving their knowledge. The results were in conformity with Hundal *et al.* (2016) who reported that knowledge level of goat farmers increased significantly after training. Sharma *et al.* (2014) also reported that the average knowledge score of the trainees increased from 4.44 to 6.32 due to dairy training. Ashraf *et al.* (2012) and Singh and Jadoun (2013) also reported significant improvement in the knowledge level of the participants after the training.

The knowledge of trainees (Table 2) regarding breeds of buffalo and cow was moderate (58.7 and 60.9%, respectively) that improved significantly (P<0.05) after training (97.1 and 98.6%, respectively). Regarding feeding practices of dairy animals, the study revealed (Table 2) that only few farmers before training knew about colostrum feeding (23.9%), green fodder requirement (35.5%), fodders used for silage making (18.1%), protein rich fodders (29.7%), protein sources used in cattle feed (17.4%), concentrate mixture requirement of lactating animal (39.9%), etc. use of mineral mixture (12.3%). However, after training, there was a considerable improvement in knowledge level about these feeding practices. The differences in pre- and post-training responses were significant (P<0.05). Kumar *et al.* (2013) also observed highly significant difference in the knowledge level of the respondents on cattle feed computation due to training. Sharma *et al.* (2014) also reported significant improvement in farmers' knowledge of feed management score (3.64 to 6.39) after the training on dairy farming.

Table 1
Knowledge level of farmers regarding dairy farming

Knowledge level (score)	Frequency (n=138)		Percentile	
	Pre-training	Post-training	Pre-training	Post-training
Low (upto 15.15)	96[b]	1[a]	69.6	0.7
Moderate (15.16 to 23.44)	36	24	26.0	17.4
High (=23.45)	6[a]	113[b]	4.4	81.9

Figures with different superscript in a row differ significantly, P<0.01

Age at first calving is a good indicator of reproductive efficiency of dairy animals. About 65.9% and 63.8% of farmers knew the appropriate age of buffalo and cow heifers at first conception before training, respectively but the knowledge level improved (94.2% and 97.7%, respectively) after training. Knowledge level of farmers regarding right time of insemination, isolation of pregnant animals from herd, normal time to expel placenta and storage of semen straw was poor before training and there was a significant improvement in these parameters after training.

The awareness perceived by farmers regarding direction and dimensions of shed (36.2 vs 83.4%), cleaning of shed floor (70.3 vs 95.7%), udder hygiene measures (39.1 vs 89.9%), common diseases of dairy animals (44.9 vs 96.4%), vaccination schedule (11.6 vs 71.7%), deworming schedule (37.7 vs 86.2%) and abortion causing diseases (16.7 vs 86.2%) were significantly (P<0.05) higher after training. Only 12.3% farmers were aware about zoonotic diseases before pre-exposure that was improved significantly (87.7 %) after training. Biswas *et al.* (2008) also reported that there was a significant difference in knowledge of respondents on deworming, artificial insemination and vaccination as a result of training.

The effect of education level of respondents on their perceived effectiveness during training is presented in Table 3. The mean correct responses of farmers about breeds of buffaloes and cows used for commercial dairy farming were significantly higher (P<0.05) for graduate farmers as compared to under matric farmers (Table 3). Perceived effectiveness of training regarding feeding, reproductive and disease management also improved with education level but the increase was non-significant. These findings are in agreement with those of Patil *et al.* (2009) who found a positive and significant relationship between education and training needs of the farmers.

Critical analysis of data revealed that 12.6±0.18 and 26±0.16 responses of farmers were found correct before and after training, respectively. The increase in correct responses appears to be due to effect of training

Table 2

Impact of dairy farming training on knowledge level of trainees regarding different aspects of dairy farming

Statements	Frequency		Percentile	
	Pre-training	Post-training	Pre-training	Post-training
Breeds of buffaloes in India for commercial dairy farming	81-[a]	134[b]	58.7	97.1
Breeds of cows in India for commercial dairy farming	84[a]	136[b]	60.9	98.6
Feeding management knowledge				
Time within which colostrum feeding is recommended after birth?	65[a]	123[b]	47.1	89.1
Quantity of colostrums to be fed to the new born calf	33[a]	107[b]	23.9	77.5
Milk feeding recommended for calf upto the age of	58[a]	123[b]	42.0	89.1
Quantity of green fodder recommended for a dairy animals per day	49[a]	121[b]	35.5	87.7
Concentrate required for a cow producing 10 kg of milk	55[a]	116[b]	39.9	84.0
Foddersfor silage making	25[a]	121[b]	18.1	87.7
Fodders rich in protein content	41[a]	91[b]	29.7	65.9
Protein sources used in cattle feed	24[a]	96[b]	17.4	69.6
Recommended mineral mixture is in 100kg of feed	17[a]	104[b]	12.3	75.4
Knowledge of concentrate feeding of close up cows	60[a]	128[b]	43.5	82.6
Reproductive management knowledge				
Age of buffalo heifer at first conception	91[a]	130[b]	65.9	94.2
Age of cow heifer at first conception	88[a]	128[b]	63.8	92.7
Body weight of breedable heifer	41[a]	125[b]	29.7	90.6
Gestation period of buffalo	99 [a]	134[b]	71.7	97.1
Gestation period of cow	113[a]	134[b]	81.9	97.1
Time to inseminate after initiation of heat signs	48[a]	125[b]	34.8	90.6
Drying up of pregnant animals	121[a]	135[b]	87.7	97.8
Separation of pregnant animal from herd	77[a]	130[b]	55.8	94.2
Normal time to expel placenta	70[a]	114[b]	50.7	82.6
Can semen straw be stored in a fridge?	27[a]	75[b]	19.6	54.3
General and disease management knowledge				
Direction and dimensions of shed	50[a]	115[b]	36.2	83.4
Cleaning of shed floor	97[a]	132[b]	70.3	95.7
Deworming schedule of cattle	52[a]	119[b]	37.7	86.2
Common diseases of dairy animals	62[a]	133[b]	44.9	96.4
Knowledge of udder hygiene	54[a]	124[b]	39.1	89.9
Vaccination schedule	16[a]	99[b]	11.6	71.7
Disease that can cause abortion in cows	23[a]	119[b]	16.7	86.2
Diseases of zoonotic importance in cattle	17[a]	121[b]	12.3	87.7

Figures with different superscripts for a parameter in a row differ significantly ($P<0.05$)

on knowledge level of farmers. The results are in conformity with Hundal *et al.* (2016). Similar results were also observed by Vidya *et al.* (2010) which indicated that pre-exposure mean score was 7.98 and post-exposure mean score was 14.91. Noor and Doha (2011) also concluded that training had positive impact on the farmer's perception and performance. The reason for improved knowledge of the respondents might be due to appropriateness of the covered subject matter, practical demonstrations, use of multimedia teaching aids, experienced experts and exposure visit to dairy farms etc. Greater motivation and interpersonal interaction with specialists may be other possible reasons for their improved knowledge level.

Thus the study revealed a significant ($P<0.05$) change in knowledge level of farmers about feeding, breeding, management, reproduction etc. after training on dairy farming. It may be concluded from present study that trainings imparted were quite effective, so regular training programmes must be organized to update dairy farmers with latest technologies and to improve their knowledge level towards dairy farming.

REFERENCES

Ashraf, E., Hayat, Z., Khan, M.Z.U., Samiullah, Atif M.A. and Haider, M.S. (2012). Impact of dairy farm management training workshop on the knowledge level of participants. *Int. J. Agric. Appl. Sci.* **4(2)**: 86-89.

Biswas, S., Sarkar, A. and Goswami, A. (2008). Impact of KVK training on Advance Dairy Farming Practices in changing knowledge and attitude of Prani- Bandhu. *J. Dairying Foods Home Sci.* **27(1)**: 43-46.

Chandrashekar, B.R., Lakshminnarayan, M.T., Krishnamurthy, B. and Shivaramu, K. (1998). Rabies: factors influencing the knowledge of veterinarians. *Mysore J Agri. Sci.* **32**: 225-228.

Table 3
Education level of respondents and their perceived effectiveness

Statements	Education level*				Pooled S.E.
	1	2	3	4	
Breeds of buffaloes in India for commercial dairy farming	0.58[a]	0.77[ab]	0.81[b]	0.80[b]	0.025
Breeds of cows in India for commercial dairy farming	0.58[a]	0.73[ab]	0.82[bc]	1.0[c]	0.024
Feeding management knowledge					
Time within which colostrum feeding is recommended after birth?	0.71	0.67	0.68	0.69	0.028
Quantity of colostrums to be fed to the new born calf	0.46	0.51	0.51	0.51	0.030
Milk feeding recommended for calf upto the age of	0.58	0.70	0.66	0.60	0.029
Quantity of green fodder recommended for a dairy animals per day	0.62	0.63	0.66	0.62	0.023
Concentrate required for a cow producing 10 kg of milk	0.71	0.59	0.62	0.63	0.023
Fodders for silage making	0.50	0.49	0.56	0.51	0.030
Fodders rich in protein content	0.33[a]	0.43[ab]	0.49[ab]	0.63[b]	0.030
Protein sources used in cattle feed	0.33	0.36	0.47	0.54	0.030
Recommended mineral mixture is in 100 kg of feed	0.50	0.43	0.41	0.51	0.030
Knowledge of concentrate feeding of close up cows	0.62	0.70	0.78	0.69	0.028
Reproductive management knowledge					
Age of buffalo heifer at first conception	0.75	0.75	0.80	0.86	0.024
Age of cow heifer at first conception	0.71	0.80	0.79	0.77	0.025
Body weight of breedable heifer	0.46	0.60	0.63	0.60	0.030
Gestation period of buffalo	0.71	0.88	0.81	0.86	0.022
Gestation period of cow	0.83	0.89	0.90	0.91	0.018
Time to inseminate after initiation of heat signs	0.50	0.60	0.66	0.63	0.029
Drying up of pregnant animals	0.79	0.86	0.86	0.94	0.021
Separation of pregnant animal from herd	0.58	0.77	0.75	0.80	0026
Normal time to expel placenta	0.71	0.65	0.69	0.60	0.028
Can semen straw be stored in a fridge?	0.29	0.28	0.41	0.49	0.029
General and disease management knowledge					
Direction and dimensions of shed	0.75	0.57	0.57	0.69	0.030
Cleaning of shed floor	0.83	0.87	0.83	0.76	0.023
Deworming schedule of cattle	0.58	0.58	0.63	0.69	0.048
Common diseases of dairy animals	0.62	0.69	0.75	0.63	0.027
Knowledge of udder hygiene	0.54	0.67	0.63	0.69	0.029
Vaccination schedule	0.38	0.39	0.41	0.54	0.030
Disease that can cause abortion in cows	0.50	0.48	0.51	0.60	0.030
Diseases of zoonotic importance in cattle	0.50	0.47	0.49	0.60	0.030

Figures with different superscripts in a row differ significantly ($P<0.05$). *Education levels- 1=Upto primary; 2=Matric; 3=Above matric, 4=Graduates

Gill, S.S., Gill, R.S. and Singh, B. (2008). Dairy Farming in Punjab. GADVASU, Ludhiana.

Hundal, J.S., Chahal, U.S., Bhatti, J.S. and Kansal, S.K. (2016). Evaluating perceived effectiveness of specialized training on pig farming. *Economic Affairs.* **61 (1)**:17-21.

Hundal, J.S., Chahal, U.S., Singh, N., Kansal, S.K. and Bhatti, J.S. (2016). Impact of training on knowledge level of goat farmers in Punjab. *Haryana Vet.* **55**: 47-49.

Kumar, R.B., Baskaran, D., Saraswathi, S., Theophilus, C. and Kumar, A. (2013). Impact of training program in adoption of cattle feed computation by farmer interest groups of Tamil Nadu. *Tamilnadu J. Vet. Ani. Sci.* **9(4)**: 264-271.

Noor, K.B.N. and Doha, K. (2011). Investigating training impact on farmer's perception and performance. *Int. J. Hum. Soc. Sci.* **1(6)**: 145-152

Patil, A.P., Gawande, S.H., Gobode, M.R. and Nande, M.D. (2009). Training needs of dairy farmers in Nagpur district. *Vet. World* **2(5)**: 187-190.

Sharma, M., Singh, G. and Keshava (2014). Impact evaluation of training programmes on dairy farming in Punjab state. *Ind. Res. J. Ext. Edu.* **14(1)**:105-108.

Singh, R. and Jadoun, Y.S. (2013). Knowledge and adoption level of animal husbandry practices among self help group women. *Vet. Pract.* **14** (Suppl. 1): 582-584.

Snedecor, G.W. and Cochran, W.G. (1994). Statistical Methods. (8th edn.). Oxford and IBH Publications, New Delhi.

SPSS. (2007). Statistical Packages for Social Sciences. Ver. 126, SPSS Inc., llinois, USA.

Vidya, P.C., Manivannan, N.K. and Sudeep, K. (2010). The effectiveness of an educational interactive video-DVD on dairy health management practices in terms of knowledge gain among dairy farmers. *J. Rural Res. Policy* **5 (7):** 45-49.