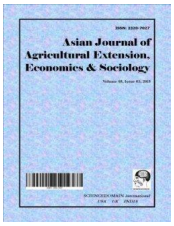

Asian Journal of Agricultural Extension, Economics & Sociology

21(1): 1-7, 2017; Article no.AJAEES.37728
ISSN: 2320-7027

Perceived Training Needs of Buffalo Dairy Farmers Regarding Scientific Animal Husbandry Practices in Haryana

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Authors' contributions

This work was carried out in collaboration between all authors. Author Sarita under the guidance of author SPS designed the study, performed the statistical analysis, wrote the protocol and the first draft of the manuscript. Authors Sarita, SSS and Rachna managed the analyses and the literature searches of the study. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2017/37728
Editor(s):
(1) Ahmed M. Diab, Associate Professor, Department of Rural Sociology & Agricultural Extension,Faculty of Agriculture, Assiut University, Egypt.
(2) Anthony N. Rezitis, Professor, Agricultural Policy, Department of Economics and Management, University of Helsinki, Finland and Department of Business Administration of Food and Agricultural Products, Universiy of Patras, Greece.
Reviewers:
(1) Rayees Ahmed Bafanda, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, India.
(2) Siti Azizah, Brawijaya University, Indonesia.
Complete Peer review History: http://www.sciencedomain.org/review-history/21893

Original Research Article

Received 26th October 2017
Accepted 12th November 2017
Published 14th November 2017

ABSTRACT

The study was carried out to identify the perceived training needs of dairy farmers regarding scientific buffalo husbandry practices and its relation with their socio-economic traits in five districts of Haryana state. A sample size of 250 dairy farmers was randomly selected for the study and data were collected through personal interview method during 2015-16. The extent of training need revealed that majority of buffalo owners (75.2%) desired for medium level of training in all the scientific animal husbandry practices followed by high (15.6%) and low (9.2%) level training needs, respectively. The study revealed that in the area of breeding practices right time of insemination was perceived to be the most needed training need followed by precautions after insemination. With respect to feeding practices maximum training need was expressed about preparation of low cost concentrate mixture followed by knowledge about feeding of animal in different stages. Marketing and insurance followed by training about mastitis control measures were the most needed training sub areas in the area of management practices. Most needed training sub areas as

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reported by dairy farmers were deworming and vaccination of animals and knowledge about common diseases and their prevention in health care sub area. Variables namely educational qualification, annual income, family size training on dairy farming, economic motivation, attitude towards rearing Murrah buffalo and knowledge of scientific practices were positively and significantly correlated while age was negatively and significantly correlated with training needs regarding scientific animal husbandry practices. The results of the study will help the extension agencies to develop suitable training modules for the dairy farmers in scientific animal husbandry practices for increasing the livestock productivity and improving the living standards of the farmers.

Keywords: Training needs; dairy farmers; buffalo husbandry; practices.

1. INTRODUCTION

India ranks first in milk production, accounting for 18.5 per cent of world production, achieving an annual output of 146.3 million tones during 2014-15 as compared to 137.69 million tones during 2013-14 recording a growth of 6.26 per cent. The number of milch animals in cows and buffaloes has increased from 111.09 million to 118.59 million, an increase of 6.75 percent from 2007 to 2012. Further the buffalo population has increased from 105.3 million to 108.7 million showing a growth of 3.19 percent during the inter census period 2007- 2012. The analysis shows nearly 36 percent of the milk production is contributed by Indigenous Buffaloes and non-descript buffaloes contribute 13 percent milk production [1]. Buffaloes play multi-faceted role in socio-economic development of rural households and act as a store of wealth of high liquidity, a resource for meeting the household nutritional security and a source of regular income. Haryana holds a special place in the field of milk production and the state is proud to be the home-tract of one of the best buffalo breeds of the world i.e. 'Murrah'. Buffalo has also been recognized to be the animal of the 21st Century and thus, systematic improvement of buffaloes for milk production of the country is a goregone conclusion. The composition of bovine population in Haryana has undergone a substantial change over the years.There is an increase in number of Buffaloes with 2.22 per cent during the inter censuses period (2007-2012). However, the female buffalo population has increased by 2.19 per cent during the inter censuses period (2007-2012). The total annual milk production in the year 2015-16 has reached 83.81 lakh tonne. This higher milk production is mainly because of increased number of livestock instead of improved productivity. The major concern that is troubling farmers is the low productivity per animal. It has been proved that maximum milk production could be achieved if all the recommended dairy practices are adopted. Therefore, the capacity building of dairy farmers to apply newer ideas and techniques of production becomes crucial. Training can play a pivotal role in increasing individuals' knowledge, skill, attitude and values which in turn will prompt farmers to adopt latest technologies in dairy farming. Although various trainings are conducted for dairy farmers but they are mostly based on mandates of institutions or organisations. However, in many instances training needs of dairy farmers vary to a greater extent. Training need is the expressed level of training needed by the respondent in each of the training areas pertaining to the scientific dairy farming practices. Training can be more valuable and significant when analysis of training needs prior to beginning of training programmes and imparting knowledge according to the needs of the farmers. Keeping the above facts in view, this study was undertaken in Haryana to identify the perceived training needs of dairy farmers regarding scientific animal husbandry practices and its relation with their personal attributes.

2. MATERIALS AND METHODS

The study was conducted in 5 districts namely Bhiwani, Hisar, Jind, Rohtak and Jhajjar of Haryana state which were selected purposively in the study as these are the major tract of Murrah buffalo. From each district one block was selected randomly. A comprehensive list of villages of each selected block was prepared. Two villages were then randomly chosen from each selected block using simple lottery method. Thus, a total of ten villages were selected in all. Twenty five buffalo farmers were randomly selected from each of the ten selected villages thus constituting a sample size of 250 buffalo farmers. To identify the training needs of buffalo owners structured interview schedule was developed in all the four major buffalo husbandry components i.e. breeding, feeding, management and health care. The buffalo owners were asked to give their preference on a three point continuum on the areas in which they required training as most needed, needed and least

needed with the score value of 3, 2 and 1, respectively. Therefore, the buffalo owners were divided into three categories as low, medium and high level of perceived training need by using mean and standard deviation. Twenty independent variables representing personal attributes of respondents were selected for correlation purpose. A perceived training need about scientific animal husbandry practices was considered as dependent variable. The data were collected personally by the researcher using the well structured and pretested interview schedule during 2015-16. Data were subjected to appropriate statistical analysis. Training Need Index was calculated by the following formula:

$$\text{Training Need Index} = \frac{\text{Obtained score}}{\text{Maximum obtainable score}} \times 100$$

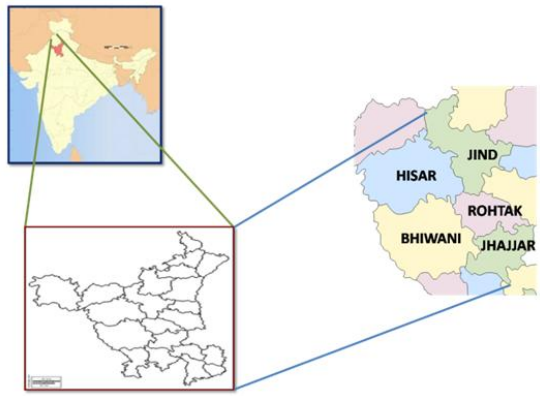

Fig. 1. Location map of study area, Haryana, (India)

3. RESULTS AND DISCUSSION

3.1 Distribution of Respondents according to Their Perceived Training Needs about Scientific Buffalo Husbandry Practices

Table 1 revealed that in breeding area majority of farmers (66.4%) were in medium category of perceived training needs followed by 18.4 and 15.2 per cent in low and high categories of perceived training needs respectively.

In case of feeding most of the farmers (68.4%) felt medium level training needs followed by 18.4 and 13.2 per cent in high and low level of training needs categories, respectively. In the area of management majority (66%) of the respondents desired medium level of training needs followed by low (18.4%) and high (15.6%) level of training needs, respectively. In case of health care, it is obvious from Table 1 that majority (70.4%) of buffalo owners expressed their desire for medium level of training followed by low level (15.2%) and high (14.4%), level of training needs. The overall analysis clearly indicated that as high as 75.2 per cent of buffalo owners desired for medium level of training in all the scientific animal husbandry practices followed by high (15.6%) and low (9.2%) level training needs, respectively. Therefore it can be concluded that dairy farmers expressed their desire for training in all areas i.e. breeding, feeding, management and health care. These findings are in line with those of [2,3,4] about training needs of improved dairy farming practices. [4] found in their study that majority of the respondents (73.75%) fall in medium training needs category followed by low training needs (14.38%) and high (11.88%) training needs.

3.2 Training Needs Perceived by Dairy Farmers in Different Sub Areas of Scientific Buffalo Husbandry Practices

Training needs of dairy farmers were ascertained in four major areas viz. Breeding, feeding, management and health care practices. Further each major area was categorized into sub-area as mentioned in Table 2. Training needs perceived by dairy farmers within the sub-area of breeding revealed that maximum training need was expressed about “right time of insemination” (60.33%) followed by “precautions after insemination” (59%), “knowledge about reproductive problems” (56.33%), “how to increase milk yield of animals” (55.33%) and “pedigree enquiry” (53%). Hence all these occupied 1st, 2nd, 3rd, 4th and 5th training needs rank order accordingly. The findings of the study imply that majority of the dairy farmers lack technical knowledge in management of right time of insemination and reproductive disorder in dairy buffalo, which in turns results in heavy economic losses to the farming community. Also the time of insemination determines the profitability ofa dairy enterprise. Unless the farmer is not getting one calf per year he will not be able to thrive well. These points out the need of organizing training to the rural farmers in the above mentioned area. The findings are in line with [5,6]. [5] found out that time of insemination was pointed out by 36 respondents (TNI=60).

Table 1. Distribution of respondents according to perceived training needs about scientific buffalo husbandry practices

Aspects	Category	Respondents (n=250)	
		Frequency	Percentage
Breeding	Low (<6.26)	46	18.4
	Medium (6.26-10.84)	166	66.4
	High (>10.84)	38	15.2
Feeding	Low (8.01)	33	13.2
	Medium (8.01-12.49)	171	68.4
	High (>12.49)	46	18.4
Management	Low (<6.94)	46	18.4
	Medium (6.94-10.82)	165	66
	High (>10.82)	39	15.6
Health	Low (<7.18)	38	15.2
	Medium (7.18-10.86)	176	70.4
	High (>10.86)	36	14.4
Overall	Low (<30.51)	23	9.2
	Medium (30.51-42.87)	188	75.2
	High (>42.87)	39	15.6

Table 2. Training needs perceived by dairy farmers in different sub areas of scientific buffalo husbandry practices

S. no.	Training needs	MN	N	LN	TS	MS	TNI	RO
	Training needs in breeding (%)							
1	Right time of insemination	37.2	44.4	18.4	453	1.81	60.33	I
2	Precautions after insemination	42	38.4	19.6	444	1.77	59.00	II
3	Pedigree enquiry	52.4	35.6	12	399	1.59	53.00	V
4	Knowledge about reproductive problems	44.8	40.8	14.4	424	1.69	56.33	III
5	Increasing milk yield	44.8	43.6	11.6	417	1.66	55.33	IV
	Training needs in feeding (%)							
1	Preparation of low cost concentrate mixture	27.6	42	30.4	507	2.02	67.33	I
2	Feeding in different stages	35.6	45.2	19.2	459	1.83	61.00	II
3	Roughages improvement	42.8	39.2	18	436	1.74	58.00	III
4	Hay and silage making	63.2	32.8	4	352	1.40	46.67	VI
5	Anti-nutritional factors	48.8	40.8	10.4	404	1.61	53.67	V
6	Withholding period	49.6	38.8	11.6	405	1.62	54.00	IV
	Training needs in management (%)							
1	Scientific housing	38.4	47.6	14	439	1.75	58.33	III
2	Waste management practices	54.8	38.4	6.8	380	1.52	50.67	V
3	Zoonotic diseases through milk	45.6	42	12.4	417	1.66	55.33	IV
4	Mastitis control measures	33.6	49.2	17.2	459	1.83	61.00	II
5	Marketing and insurance	20.8	48.4	30.8	525	2.1	70.00	I
	Training needs in health care (%)							
1	Parasite control	36.8	44	19.2	456	1.82	60.67	IV
2	Common diseases and their prevention	29.6	47.6	22.8	483	1.93	64.33	II
3	Deworming and vaccinating the animal	28	46.8	25.2	493	1.97	65.67	I
4	First aid of animals	37.6	40.8	21.6	460	1.84	61.33	III
5	Side effects of medicine	62	31.2	6.8	362	1.45	48.33	V

MN-Most Needed, N-Needed, LN-Least Needed, TS-Total Score, MS-Mean score, TNI-Training Need Index, RO-Rank Order

With regards to feeding, maximum training was needed about "preparation of low cost concentrate mixture" (67.33%). This may be due to the high cost of feed and as a result farmers are seeking a way for low cost inputs such as feeds and fodder and again the feeding system is unscientific and purely based on local fodder. Other important perceived training need subareas were "knowledge about feeding of animal in different stages" (61%) followed by "improvement in nutritive value of roughages" (58%), "knowledge about withholding period of medicine treated animal's milk" (54%), "knowledge about antinutritional factors in different feeds and fodders" (53.67%) and "procedure of making hay and silage" (46.67%). [7] found that balanced feeding and compounding balance feeds using locally available feed items were the most needed items in the schedule. [6] revealed that preparation of balanced ration for their animals at the cheaper rate as the most important training need followed by preservation of fodder crops (21.66%) and importance of feeding mineral mixture (16.66%). The findings go along with [8]. As a result of training imparted, the dairy farmers will know how to prepare the balanced feed ration and ways to improve the milk production and make the dairying a successful enterprise.

In the area of management, it can be seen that most (70%) of dairy farmers had desired to have training in "marketing and insurance" and occupied 1st rank. Nowadays all the government transactions are through banks and the unawareness of rural livestock farmers will create some benefits go unattainable. Procedures of insuring animals also are making them fooled if unknown due to the interfering middle men. Hence, marketing and insurance was indicated as the most important need. Whereas, training about "mastitis control measures" (61%), "scientific housing" (58.33%), "zoonotic diseases transmitted through milk" (55.33%) and "knowledge about waste management practices" (50.67%) occupied 2nd, 3rd and 4th and 5th ranks, respectively. Similar results were obtained by [6,8,9]. [7] reported that banking was indicated as the most important need (TNI=96.67) followed by insurance (73.33), marketing of products (63.33) and marketing of livestock (23.33).

It can be seen from Table 2 that a majority (65.67 %) of dairy farmers needed training in sub area "deworming and vaccination of animals" followed by "knowledge about common diseases and their prevention" (64.33%). This might be due to the fact that dairy farmers have inadequate knowledge about technical aspects of diseases such as etiology, symptoms, diagnosis, prevention and control measures of the diseases. The necessity of timely treatment and the resulting financial burden make the farmers think more about disease prevention and control. Also unavailability of trained professionals in the odd hours of the night makes them dreadful about the serious diseases of their animals. Other important training sub areas were "knowledge about first aid of animals" (61.33%) and "parasitic control measures" (60.67%) and they occupied, 3rd and 4th ranks, respectively as perceived by the farmers. The last rank was of farmers occupied by "side effects of medicines" (48.33%) as in case of above, three categories. Hence this is the least important training area of health care practice as expressed by the respondents. These Findings are in conformity to the observations found by [6,7,10].

3.3 Relationship between Personal Attributes and Training Needs of Dairy Farmers regarding Scientific Buffalo Husbandry Practices

The data given in Table 3 shows that age was negatively and significantly correlated with training need of the respondents. It was quite logical that respondents who were younger in age needed training about scientific animal husbandry practices. Similar finding in case of age was observed by [11,12]. It was observed that there is highly positive and significant correlation between educational qualification and training needs. It might be because education imparts knowledge and creates awareness and curiosity to learn skills and newer things. These observations are in line with those of [13]. Also annual income was found to have a positive and significant relationship with training needs. Similar findings were reported by [14,15]. Training need had significant correlation with family size. The findings are in line with findings of [16]. Variables like training on dairy farming, economic motivation and attitude towards rearing Murrah buffalo were positively and significantly correlated with training needs. Knowledge of scientific practices was found to have a positive and significant relationship with training needs of the dairy farmers. It suggests that, knowledge creates awareness and change in the attitude to sharpen the skills through training programmes. Findings of [9] are matching with the present findings.

Table 3. Correlation between personal attributes and overall perceived training needs of dairy farmers regarding scientific buffalo husbandry practices

S. no.	Independent variables	Overall perceived training need 'r'
1	Age (X_1)	-.332**
2	Sex (X_2)	-.062
3	Caste (X_3)	.098
4	Annual income (X_4)	.160*
5	Educational qualification (X_5)	.577**
6	Family size (X_6)	.125*
7	Type of family (X_7)	-.043
8	Land holding (X_8)	.120
9	Social participation (X_9)	.042
10	Training on dairy farming (X_{10})	.255**
11	Information seeking behaviour (X_{11})	.116
12	Economic motivation (X_{12})	.249**
13	Risk orientation (X_{13})	.103
14	Attitude towards rearing Murrah buffalo (X_{14})	.214**
15	Market orientation (X_{15})	-.006
16	Scientific orientation (X_{16})	.100
17	Localiteness-cosmopoliteness (X_{17})	.102
18	Credit orientation (X_{18})	.116
19	Change proneness (X_{19})	-.107
20	Knowledge of scientific practices (X_{20})	.423**

**P=0.05, **P<0.01*

4. CONCLUSION

On the whole it could be concluded that the majority of the dairy farmers were under medium category of perceived training needs regarding scientific animal husbandry practices. Maximum training need was expressed about right time of insemination, preparation of low cost concentrate mixture, marketing and insurance and deworming and vaccination of animals in breeding, feeding, management and health care practices, respectively. This fact should be taken into consideration while formulating training curriculum for buffalo farmers of the study area. It may also be concluded that training needs of respondents vary with the changing personal attributes of the farmers. Therefore, these variables may be taken into consideration while selecting the trainees or participants in training. This will help in better organization and efficiency of training programmes.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://sciencedomain.org/review-history/21893