

KNOWLEDGE LEVEL OF DAIRY FARMERS ABOUT PREVENTION OF ZOO NOTIC DISEASES

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SUMMARY

The present study was carried out to assess the knowledge level of dairy farmers about prevention of zoonotic diseases. The study was conducted in 8 villages from 2 districts district of Haryana. A majority of the respondents were having moderate knowledge about such practices. The assessment was done based on both the recommended and contradicted practices suggested by public health experts. Correlation between personality traits of the respondents and their knowledge was also ascertained. It was observed that different variables like age, experience, social participation, caste, land holding, herd size, extension participation and scientific orientation were varyingly associated with the knowledge scores. The respondents were divided in to three categories for appropriate analysis. It was observed that commercial category farmers were having an edge as compared to the household farmers.

Keywords: Dairy farmers, Haryana, Knowledge, Zoonoses

Even though, the farmers in India have been living in close proximity to the animals traditionally, but the chances of zoonotic diseases were far less given the lower density and frequency of interaction. The situation has changed drastically in the past few years. There is an increasing intensification of the livestock production systems and mobility of both domestic animals and humans is on rise. The threat of zoonotic diseases being contracted and their spread is significantly higher now. It is important that dairy personnel or farmer have a clear understanding of the farm's policy and works instructions and have the right attitude to personal and operational hygiene. The biosecurity measures undertaken on farms appear to depend not only on economics or feasibility, but on producers' understanding of the principles of biosecurity and their attitudes towards and motivations for undertaking/not undertaking such disease preventive measures (Gilmour *et al.*, 2011). It has been opined that when dealing with emerging zoonoses, the first priority is seeking knowledge how to deal with the zoonosis. This knowledge is the input of a control strategy (Boekhorst *et al.*, 2010). However, empirical information about the farmers' knowledge in preventing zoonoses is lacking. With this backdrop the present study was conducted to assess the farmers' knowledge about zoonoses prevention practices.

The study was carried out in Hisar and Jind districts of Haryana. These districts were selected on the basis of highest population of cattle and buffalo. Multistage random sampling technique was used. Two blocks from each district were chosen randomly using simple lottery method. Thereafter, two villages were again selected from each block randomly. In this way, 8 villages were selected from both the districts. Village wise list of buffalo and

cattle owners was prepared and 20 dairy farmers from each village were then selected randomly. In this way, a total of 160 dairy farmers constituted the sample for the study. Similarly, lists of peri-urban dairy farmers engaged in commercial dairying were compiled for both the districts. Thereafter, 20 commercial dairy farm owners from each district were selected randomly. The data were collected through well-structured pre-tested schedule by holding interview with the farmers during 2017-18.

The university extension publications were scanned for zoonoses prevention recommendations. However, it was not there as such. The recommendations of the experts from public health were obtained and these were divided into two individual knowledge domains recommended and contradicted practices (i.e. Do's and Don'ts of practices). These recommendations were in the form of practices that farmers should follow (Do's) and practices that farmers should not follow (Don't). These were used as a basis to assess the knowledge of the respondents regarding prevention of zoonotic diseases. Simple question based on these recommendations were prepared and the responses of selected farmers were obtained. A score of 1 was assigned for correct response and zero was assigned to incorrect response. There were 68 items in all thus making the possible knowledge score range from 0 to 68. The overall knowledge score for each respondent was then calculated by adding up all the scores obtained under both the sub areas. Dairy farmers were then grouped into three categories *viz.*, low, medium and high level of knowledge using equal class interval method.

Knowledge mean score = $\frac{\text{Total score obtained by respondents}}{\text{Number of respondents}}$

Pearson's coefficient of correlation was used to find the correlation between the variables.

The average knowledge score of respondents was

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46.88 thus indicating a moderate level of knowledge. The commercial dairy farmers were having better knowledge about prevention of zoonotic diseases than the household farmers, the mean scores being 55.55 and 45.80, respectively (Table 1). The average knowledge score about the recommended practices for zoonotic diseases prevention obtained by dairy farmers was 33.02. There were differences between knowledge level of household and commercial farmers (Table 1). Similarly, there were variations in knowledge about Don'ts. The average knowledge score about Don'ts of zoonotic diseases exhibited by dairy farmers was 13.86 (Table 1). It appears that the commercial farmers have been actively seeking information about dairy farming including zoonoses prevention.

It can be seen from Table 2 that in case of household farmers, a majority (43.75%) were having medium knowledge about 'Do's' while the remaining 39.38 and 27 per cent were having low and high knowledge scores, respectively. Similarly, the household farmers' knowledge about 'Don'ts' was 68, 53 and 39 per cent in medium, low and high knowledge score categories, respectively. On the contrary, a higher percentage (80%) of commercial

farmers obtained high knowledge scores about 'Do's' practices. Again, a higher percentage of commercial farmers (60%) were having higher knowledge scores when asked about 'Don'ts'. Also, more than half the number of household farmers (56.25%) were having medium level of knowledge about prevention of zoonotic diseases while 31.25 and 12.50 per cent of household farmers were observed to be with low and high level of knowledge. In case of commercial category of dairy farmers, a majority (60%) of farmers were having high level of knowledge. On the whole, it can be seen that a majority (54.44%) of dairy farmers were having medium knowledge and the remaining 27.78 and 17.78 per cent were having high and low level, respectively (Table 2).

It indicates that the knowledge about zoonoses prevention is there in the social system as the respondents would not have scored high in the absence of such a knowledge. Further, there were differences between commercial and household farmers. More of commercial farmers scored high when compared to household dairy farmers. Further classification of respondents in the three categories revealed that none of the commercial category farmers was lying in low score category. This further

Table 1
Summary of Knowledge scores of Respondents

Sr. No.	Variable	Household Farmers			Commercial Farmers		Overall	
		Possible Range	Observed Range	Mean± SD	Observed Range	Mean± SD	Observed Range	Mean± SD
1	Do's	0-47	21-45	32.38±5.60	30-41	38.20±2.33	21-45	33.02±5.64
2	Don'ts	0-21	6-21	13.43±3.87	13-20	17.35±2.60	6-21	13.86±3.95
3	Overall Knowledge	0-68	28-66	45.80±8.98	45-61	55.55±4.32	28-66	46.88±9.11

Table 2
Distribution of dairy farmers on the basis of level of knowledge scores about Do's and Don'ts

Category	Household Farmers (n=160)		Commercial Farmers (n=20)		Overall (n=180)	
	Frequency	%	Frequency	%	Frequency	%
Do's Knowledge						
Low (Below 30)	63	39.38	0	0.00	63	35.00
Medium (30 - 37)	70	43.75	4	20.00	74	41.11
High (Above 37)	27	16.88	16	80.00	43	23.89
Don'ts Knowledge						
Low (Below 12)	53	33.13	0	0.00	53	29.44
Medium (12 - 16)	68	42.50	8	40.00	76	42.22
High (Above 16)	39	24.38	12	60.00	51	28.33
Overall Knowledge	F (%)	Avg. score*	F (%)	Avg. score*	F (%)	Avg. score*
Low (Below 42)	50 (31.25)	35.52	0 (0)	0.00	50 (27.78)	32.52
Medium (42 - 54)	90 (56.25)	48.11	8 (40)	51.00	98 (54.44)	48.35
High (Above 54)	20 (12.50)	61.10	12 (60)	58.58	32 (17.78)	60.16

Table 4**Correlation between personal attributes and knowledge scores of respondents ('r' value)**

Attribute	Household farmers	Commercial farmers	Overall
Age	0.82**	0.05	0.73**
Education	-0.15	-0.04	-0.08
Experience in dairy farming	0.87**	-0.10	0.75**
Type of Family	-0.10	-0.01	-0.11
Social participation	0.05	-0.27	0.01
Mass media exposure	-0.12**	-0.38	-0.24**
Caste	0.28**	-0.06	0.28**
Land holding	0.33*	-0.32	0.27**
Herd size	0.21	0.37	0.36**
Extension participation	0.24**	-0.30	0.23**
Risk orientation	0.86**	-0.25	0.75**
Scientific orientation	0.08	-0.02	0.09
Economic motivation	0.22	0.34**	0.35**

*Significant at 5% level of probability

** Significant at 1% level of probability

strengthens the proposition that acquisition of such knowledge requires active role by the farmers. Earlier Hundal *et al.* (2016) and Bhabhor (2015) reported medium level of knowledge of dairy farmers. But Thakkar (2013) reported that a majority (86.67%) of the farmers practicing dairy farming were having low to medium level of knowledge about zoonotic diseases. Prajapati *et al.* (2015) reported that majority (63.5%) of the respondents were having medium, whereas 16 and 20.5 percent of the respondents were having high and low level of knowledge about recommended health care practices.

It is also important to understand the nature and degree of relationship between knowledge and other personality traits of the respondents. It is evident from the Table 3 that age and experience were having significant association with knowledge scores of the respondents of household categories. It is conjectured that the knowledge about zoonoses prevention has been acquired gradually over a period of time by the respondents. It is possible that such knowledge is not available as such but is acquired by the farmers through active information seeking behavior. It is to be noted that the knowledge was not available in the university extension material and is perhaps an area which has not received due attention in the regular programmes. Perhaps, there is certain degree of bias towards production enhancement in regular extension efforts. The commercial farmers seem to be on a different landscape as the two factors of age and experience do not seem to affect their

knowledge scores significantly. Further, risk orientation and economic motivation were having strong associations with the knowledge scores. It appears that those farmers who have higher risk orientation and economic motivation have significantly different information seeking behavior. Further studies to understand their information seeking behavior are suggested. Hundal *et al.* (2016) earlier emphasized that the farmers were at high-risk of zoonotic diseases, and there is need to educate them about scientific management methods, safe disposal of infected material, and handling of livestock products for effective containment of zoonoses. Similarly, Zhang *et al.* (2019) reported after a meat analysis that there is insufficient awareness and knowledge of brucellosis were observed in the original studies conducted mainly in Asia and Africa.

It is concluded that a majority of the household category of dairy farmers possessed moderate knowledge about zoonoses prevention. Also, there is need to emphasize on zoonosis prevention in regular extension efforts as such information was missing in routine extension literature.

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