RESEARCH ARTICLE

Information-seeking Behavior of Dairy Farmers regarding Prevention of Zoonotic Disease

Rakesh Ahuja[1*], Gautam[2], Sarita[3], Rachna[4], Ruchi Singh[5]

Abstract

The present study was carried out to ascertain dairy farmers' information-seeking behavior regarding the prevention of zoonotic diseases. The study was conducted in 8 villages chosen randomly from 2 districts of Haryana state. A majority of the respondents had moderate information-seeking behavior about zoonoses. This was assessed in terms of 'sources of information' and 'extent and how frequently the information was sought.' Further, the correlation between the respondents' personality traits and their information-seeking behavior scores revealed that different variables like extension participation, social participation, caste, and risk orientation exerted significant influence. Most of the time, the sources utilized by the respondents were progressive and co-farmers, followed by veterinary hospitals, neighbors/ friends, training, etc. Respondents sought more information on selection criteria for disease-free animals, storage of feed, supplemental feed preparation, and health care. It is suggested that further studies to understand the factors affecting the information behavior of farmers are needed.

Keywords: Dairy farmers, Haryana, Information-seeking behavior, Zoonoses

Ind J Vet Sci and Biotech (2021): 10.21887/ijvsbt.17.3.12

Introduction

The dairy farmers dispersed throughout the rural areas maintain, on average, a herd of two three milch animals, comprising cows and/or buffaloes (Rakesh *et al.*, 2017). With the advancement in awareness and understanding, the important thing among farmers is their concern about their animal health. The biosecurity measures undertaken on farms depend 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). An individual's belief towards their ability to perform a behavior (perceived behavioral control) is influenced by the availability of information about that behavior (Taylor and Todd, 1995). Similarly, when the dairy farmers perceive that they possess information (Taylor and Todd, 1995) that may help them minimize the risk of encountering zoonotic disease, they are more likely to engage in that behavior. Recently many emerging and re-emerging infectious diseases have originated from animals, but the phenomenon is not new. It is often opined that most infections have originated from domesticated animals and evolved during their co-evolution with humans (Pearce-Duvet, 2006). Such infections as are shared between man and animals are called zoonotic. Given the importance of farmers' role in maintaining cleanliness and maintaining proper hygiene is key to avoiding transmission of such diseases, a study was undertaken to ascertain the information-seeking behavior of dairy farmers in Haryana state. The present article summarizes the part of the study associated with the information-seeking behavior of farmers.

[1]Department of Veterinary and Animal Husbandry Extension Education, International Institute of Veterinary Education and Research, Bahu Akbarpur, Rohtak, Haryana, India

[2]Department of Veterinary and Animal Husbandry Extension Education, College of Veterinary Sciences, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Haryana, India

[3]Directorate of Extension Education, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Haryana, India

[4]Dairy Extension, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Haryana, India

[5]Department of Veterinary and Animal Husbandry Extension Education, College of Veterinary Sciences, Nanaji Deshmukh Veterinary Science University, Jabalpur-482001, Madhya Pradesh, India

Corresponding Author: Rakesh Ahuja, Department of Veterinary and Animal Husbandry Extension Education, International Institute of Veterinary Education and Research, Bahu Akbarpur, Rohtak, Haryana, India, e-mail: rakesh.ahuja2009@gmail.com

How to cite this article: Ahuja, R., Gautam, Sarita, Rachna, Singh, R. (2021). Information-seeking Behavior of Dairy Farmers regarding Prevention of Zoonotic Disease. Ind J Vet Sci and Biotech, 17(3): 56-60.

Source of support: Nil

Conflict of interest: None.

Submitted: 12/03/2021 **Accepted:** 23/06/2021 **Published:** 16/08/2021

Materials and Methods

The present study was conducted in Hisar and Jind districts of Haryana during 2017-18. Multistage random sampling technique was used to select respondents from 8 different

villages. A total of 160 dairy farmers constituted the sample for the study. Also, a list of peri-urban dairy farmers engaged in commercial dairying was compiled, and 20 commercial dairy farm owners from each district were selected randomly. Information-seeking behavior of respondents was assessed in terms of information sources, quantity, and how frequently it was sought' about dairy animals. This was done by using a schedule containing 6 items in sources of information and 7 items regarding the number of items. The respondents were requested to give responses on a three-point continuum scale, i.e. always, sometimes, and never, and the scores 2, 1, and 0 were assigned, respectively. Finally, to assess how frequently the information was sought, the respondents were requested to give responses on a four-point continuum scale for seven items, and the scores 3, 2, 1, and 0 were assigned, respectively. The data were collected personally by the researcher using an interview schedule by personal interview method of the farmers by visiting their farms. The respondents were explicitly explained the purpose of the study, the context being zoonoses. Each respondent's information-seeking behavior scores were then calculated by adding up the scores obtained per item in three components.

Results and Discussion

Information-seeking Behavior of Respondents Regarding Prevention of Zoonotic Diseases: The average information-seeking behavior score of respondents was 24.22 (Table-1), thus indicating a moderate degree of information-seeking about zoonoses. The behavior was studied in three components. In comparison to commercial farmers, household farmers utilized lesser sources to get information. Further, they exhibited characteristics of seeking reasonably well informed about different activities. Some workers have reported that healthcare does receive the highest priority in terms of information-seeking by farmers. For example, Gangil *et al.* (2019), who conducted a study in five districts of Punjab, observed that the essential information needs were knowledge about infectious diseases and the total areas 'health care' perceived as most priority areas.

Further, the respondents differed significantly in information-seeking behavior, although most of them engaged moderately in seeking information about dairy animals (Table-2). The distribution of respondents according to different constituents of information-seeking behavior is summarized in Table-3. Its implications are discussed under relevant sub-heads.

Sources Utilized by Respondents to Obtain Information: The results regarding sources of information are summarized in Table 4. Co-farmers, including progressive farmers, were most frequently utilized as information sources. Veterinary hospitals, neighbors, training, demonstration & field days, and other miscellaneous sources were relatively less utilized. This indicates that respondents, in general, want to emulate progressive farmers. It appears that a majority of respondents look for legitimized information in simple terms, which largely is provided by such progressive farmers. On the other hand, training, field days, etc, received a lower rank. This indicates that extension agencies often neglect zoonoses.

The Extent of Information Sought: The extent of information sought by the respondents also varied. The commercial farmers obtained higher average scores than the household farmers indicating that they were seeking more information about animal rearing. The respondents exhibited characteristics of seeking fairly well the extent of information about different activities. The mean value obtained was 9.02 out of a maximum possible of 14. The respondents' scores of household and commercial farmers indicate that household

Table 1: Summary of Information-seeking behavior of respondents

			Household Farmers		*Commercial Farmers*		*Overall*	
Sr. No.	*Variable*	*Possible Range*	*Observed Range*	*Mean ± SD*	*Observed Range*	*Mean ± SD*	*Observed Range*	*Mean ± SD*
1	Frequency of use of sources to get information	0-12	0-11	6.30 ± 2.91	6-11	8.30 ± 1.42	0-11	6.52 ± 2.85
2	Extent of information do farmers seek in the different activities	0-14	0-13	9.26 ± 2.88	5-13	7.05 ± 1.96	0-13	9.02 ± 2.88
3	Frequency at which farmer seek information in the different activities	0-21	1-13	8.58 ± 2.92	7-13	9.55 ± 1.76	1-13	8.68 ± 2.82
4	Overall scores	0-47	4-37	24.14 ± 6.81	20-34	24.90 ± 3.77	4-37	24.22 ± 6.54

Table 2: Distribution of respondents according their information-seeking behavior

		Household Farmers (n=160)		*Commercial Farmers (n=20)*		*Overall(n=180)*	
Variable	*Category*	*F (%)*	**Avg. score*	*F (%)*	**Avg. score*	*F (%)*	**Avg. score*
Information-seeking Behavior	Low (Below 16)	21 (13.13)	10.86	0 (0)	0	21 (11.67)	10.86
	Medium (16 - 27)	93 (58.13)	23.52	15 (75)	23.13	108 (60)	23.46
	High (Above 27)	46 (28.75)	31.46	5 (25)	30.2	51 (28.33)	31.33

*Avg score=average information-seeking behavior score

Table 3: Distribution of respondents according to different constituents of information-seeking behavior

Frequency of use of sources to get information						
	Household Farmers (n=160)		*Commercial Farmers (n=20)*		*Overall (n=180)*	
Category	*F*	*%*	*F*	*%*	*F*	*%*
Low (Below 5)	40	25.00	0	0	40	22.22
Medium (5 – 8)	87	54.38	13	65	100	55.56
High (Above 8)	33	20.63	7	35	40	22.22
Extent of information which farmers seek in the different activities						
	Household Farmers		*Commercial Farmers*		*Overall (n=180)*	
Category	*F*	*%*	*F*	*%*	*F*	*%*
Low (Below 5)	15	9.38	0	0	15	8.33
Medium (5 - 8)	22	13.75	17	85	39	21.67
High (Above 8)	123	76.88	3	15	126	70
Frequency at which farmer seek information in the different activities						
	Household Farmers		*Commercial Farmers*		*Overall (n=180)*	
Category	*F*	*%*	*F*	*%*	*F*	*%*
Low (Below 6)	19	11.88	0	0	19	10.56
Medium (6 - 9)	84	52.50	12	60	96	53.33
High (Above 9)	57	35.63	8	40	65	36.11

Table 4: Item-wise sources utilized by respondents to obtain information

Sr. No	*Items/Areas*	*Overall respondents (n=180)*		
		Total Score	*MS*	*Rank*
1	Veterinary hospital	241	1.34	III
2	Progressive farmers	252	1.40	II
3	Neighbours/Friends	240	1.33	IV
4	Co- farmers	277	1.54	I
5	Training, Demonstration & Field days	105	0.58	V
6	Others	14	0.08	VI

Table 5: Item - wise extent of information sought by respondents

Sr. No	*Items/Areas*	*Overall respondents (n=180)*		
		Total Score	*MS*	*Rank*
1	Selection criteria for disease free animal	262	1.46	*I*
2	Feeding	222	1.23	*V*
3	Watering	219	1.22	*VII*
4	Supplemental feed preparation	235	1.31	*III*
5	Storage of feed	240	1.33	*II*
6	Health care	228	1.27	*IV*
7	Breeding services	221	1.23	*VI*

farmers seek more information in different activities than commercial dairy farmers do.

Frequency of information Sought: The respondents had lower scores in the frequency at which they seek information about different activities with the mean value of 8.68, the maximum possible score being 21. It can be seen from Table-2 that a significant percentage (60%) of respondents had a medium level of information-seeking behavior. This seems to indicate that the respondent's information-seeking behavior is significantly varying. This finding conforms with the findings reported by Suresh (2004), Nande *et al*. (2009), and Rakesh *et al*. (2016), who reported that the majority of milk producers had a medium level of information-seeking behavior. The argument gets substantiated with the data presented in table-2. It is suggested that there is a need to reach out to household farmers through focused extension efforts actively.

The picture becomes further clear when the components of the information-seeking behavior are looked closely. In the present study, a majority of household farmers (58.13%) had medium level of information-seeking behavior while 28.75 and 13.13 percent of them had high and low level, respectively. Similarly, in the case of commercial farmers, majority (75%) of respondents had a medium level of information-seeking behavior and remaining all the 25 percent of commercial dairy farmers had a high level of information-seeking behavior. Perhaps, they were differently motivated to seek information about different activities associated with dairy animal rearing.

Preference for Information Sought: The data summarized in Table-5 reveals that the respondents sought information primarily about selection criteria for disease-free animals, storage of feed, supplemental feed preparation, and health care. On the other hand, they sought information about feeding, breeding services, and watering much less frequently. It is to be noted here that breeding and feeding are the two most important areas that affect a dairy

Table 6: Item - wise frequency of respondents for seeking information

Sr. No	Items/Areas	Overall respondents (n=180)		
		Total Score	MS	Rank
1	Selection criteria for disease free animal	262	1.46	I
2	Feeding	249	1.38	II
3	Watering	218	1.21	IV
4	Supplemental feed preparation	233	1.29	III
5	Storage of feed	212	1.18	V
6	Health care	200	1.11	VI
7	Breeding services	190	1.06	VII

Table 7: Correlation between personal attributes and information-seeking behavior score of respondents

Sr. No.	Attribute	Household farmers	Commercial farmers	Overall
		'r' value	'r' value	'r' value
1.	Age	0.39**	-0.10	0.36**
2.	Education	0.17*	0.38	0.19*
3.	Experience in dairy farming	0.35**	-0.00	0.32**
4.	Type of Family	-0.19*	-0.34	-0.20**
5.	Social participation	0.50**	0.12	0.48**
6.	Mass media exposure	0.12	0.24	0.10
7.	Caste	0.45**	-0.20	0.42**
8.	Land holding	0.36*	-0.10	0.31**
9.	Herd size	0.30**	0.19	0.18*
10.	Extension participation	0.69**	0.27	0.67**
11.	Risk orientation	0.46**	0.53**	0.46**
12.	Scientific orientation	0.24**	0.28	0.24**
13.	Economic motivation	0.28**	0.04	-0.25**

*Significant at 5% level of probability
** Significant at 1% level of probability

enterprise's success. Yet respondents were not seeking information in these areas frequently. In Haryana, Ahuja (2015) reported that the least needed training area was animal breeding, in farmer's opinion. It appears that respondents viewed the success of dairy enterprise more with a selection of good animals and with good quality supplemental feed preparation. Also, the item-wise frequency of respondents' information-seeking revealed that dairy animals' selection and feeding received priority, with healthcare and breeding receiving least attention (Table 6).

Relationship between Personal Attributes of Respondents and their Information-seeking Behavior

The relationship between personal attributes and information-seeking behavior scores of respondents is summarized in Table 7. The relationship between the two varies between household and commercial farmers, indicating different patterns between the two categories. Extension participation, social participation, caste, and risk orientation played significantly important roles compared to other factors like mass media exposure, etc. The highest degree of association was between extension participation and information-seeking scores.

The association with these factors was moderate except for extension participation. However, it is to be noted that veterinary hospitals ranked moderately when respondents were asked about sources of information utilized. The findings confirm with the results of Singh *et al*. (2016). There is a need to study the information-seeking behavior of the respondents further, especially the factors affecting it.

Conclusion

Even though the farmers in India have been living close to the animals traditionally, 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 the rise. The threat of zoonotic diseases being contracted and their spread is significantly higher now. Yet, the farmers seemingly seek information more frequently on issues like the selection of diary animal and their feeding. Many workers have earlier highlighted the lack of knowledge of farmers regarding zoonoses. So it is suggested that there should be dedicated focused extension efforts for zoonose prevention, perhaps to improve the farmers' awareness. It is also proposed that mass media can be effectively utilized for disseminating information about such threats. Active participation of farmers armed with adequate knowledge can go a long way in reducing the risk of zoonotic diseases.

Acknowledgement

The authors are grateful to the Indian Council of Medical Research, New Delhi, India, which funded this study, and respondents who participated in the study.

References

Ahuja, R. (2015). Entrepreneurial behavior of dairy farmers in Haryana, MVSc Thesis, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Haryana.

Gangil, D., Verma, H. K., Singh, J. and Kashyap, N. (2019). Prioritisation of Information Demand of Dairy Farmers of Punjab. *Int. J. Curr. Microbiol. App. Sci. 8*(01): 2204-2212.

Gilmour, J., Beilin, R. and Sysak, T. (2011). Biosecurity risk and peri-urban landholders–using a stakeholder consultative approach to build a risk communication strategy. *Journal of Risk Research*, *14*(3): 281-295.

Nande, M. P., Gawande, S. H., Patil, A. M. and Khode, N. V. (2009). Information-seeking behavior of dairy farmers in Nagpur district of Maharashtra. *Journal of Community Mobilization*

and Sustainable Development, *4*(1): 99-102.

Pearce-Duvet, J. M. (2006). The origin of human pathogens: evaluating the role of agriculture and domestic animals in the evolution of human disease. *Biological Reviews*, *81*(3): 369-382.

Rakesh, A., Singh, S. P., Sangwan, S. S. and Gautam (2016). Entrepreneurial behavior of dairy farmers in Haryana. *Haryana Veterinarian*, *55*(1): 6-11.

Rakesh, A., Singh, S. P., Sangwan, S. S. and Gautam (2017). Study on decision making ability and risk orientation among dairy farmers and correlates with their socio-economic and psychological characteristics. *Haryana Veterinarian*, *56*(1): 77-82.

Singh, N., Malhotra, P. and Singh, J. (2016). Information needs and seeking behavior of dairy farmers of Punjab. *Indian Journal of Dairy Science*, *69*(1): 98-104.

Suresh (2004). Entrepreneurial behavior of milk producers in Chittoor district of Andhra Pradesh, A critical study (Unpublished master's dissertation), Acharya N. G. Ranga Agricultural University, Hyderabad, Andra Pradesh.

Taylor, S. and Todd, P. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intention. *International Journal of Research in Marketing*, *12*(2): 137-155.