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Preferences and Perceived Effectiveness of Information Sources for Livestock Production

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ABSTRACT

The present study analysed the preferences of dairy farmers for information, its sources and effectiveness of various media to disseminate knowledge about livestock production technologies among dairy farmers in Punjab. The data was collected during September 2019 fair held at Punjab Agricultural University, Ludhiana from purposively selected 120 farmers having dairy cattle. Information need of respondents was highest for disease control methods. Training camps and mobile phones were considered easily available information sources as well as were the most preferred information sources. Nearly half of the respondents very frequently consulted Veterinary Inspectors (VIs) for animal health problems while a large majority of respondents contacted KVK scientists very frequently followed by VIs for seeking knowledge regarding livestock production. Dairy farmers perceived training as the most effective source to acquire knowledge on dairy farming technologies followed by field veterinarians/VOs. It can be concluded that the extension agents should approach dairy farmers through trainings as farmers considered it the most effective information source.

INTRODUCTION

Over the past few decades, animal science research has offered a number of improved technological options that could raise the productivity of different livestock species if adopted area-wide. Improved technologies derived from research require some degree of innovation, if they are to be adopted into local farming systems. When a farmer has full information about the new technology and its potential, it is adopted for a long run. In contrast to the traditional belief that economic benefit is the only base for adoption or non adoption of a technology there are other factors such as relative advantage, observability, divisibility, simplicity and compatibility of the technology with the existing system that affect the adoption process. Extension education plays an important role in the process of adoption of any new technology.

In present era, both information and knowledge have become important for effective decision-making process and farmers are exploring various information sources for improving their animal production in an effective manner (Adhiguru et al., 2009). This fact was well supported by Chellapandian et al., (2016) as they recorded improvement in level of adoption with improvement in level of knowledge imparted through training. In India, in dairy sector the research information is disseminated only among 5 per cent of the farmers (Singh et al., 2016). In order to achieve the high target of information flow, extension services have to identify needs and sources of information preferredby the farmers. Kumar (2010) found that farmers use the internet to access information quickly, and prefer Google as search engine, but on the other hand large population still depend a lot on print media sources like, newspapers and magazines (Chauhan and Kansal, 2014). Hence, it is on the part of the extension professionals to understand the user needs specifically. While, assessing the effectiveness of information sources pronounced features of a good information source i.e. relevance, timelessness, accuracy, cost effectiveness, reliability,

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usability must be taken care of (Starasts, 2005). Among all these information sources, which one they prefer, why they prefer it and which information source is most effective for them are the factors which need to be known to the researchers. This will help in strengthening the preferred sources of information so as to facilitate the gain and retention in knowledge (Nain et al., 2015; Yadav et al., 2017; Sarnaik et al., 2020). Hence the present study was aimed to find out the preferences of dairy farmers for information, its sources and effectiveness of various media to disseminate knowledge about livestock production technologies among dairy farmers in Punjab.

METHODOLOGY

The Directorate of Extension Education, PAU, Ludhiana organizes two days 'Kisan *Mela'* each at the university campus in the months of March and September every year. During the *mela*, farmers from Punjab and adjoining states visit the stalls of different colleges, departments of the university and private stalls to supplement their knowledge of agriculture and allied subjects. For the purpose of study, data was collected from purposively selected 120 farmers having dairy cattle, of the Punjab state at September 2019 fair held at PAU, Ludhiana. In the face-to-face interview with dairy farmers, the structured interview schedule to study information flow on livestock production on the virtue of their information needs, availability, preference and effectiveness of information sources to disseminate knowledge among farmers was used as the data collection tool. Frequency of contact by dairy farmers with various extension agencies in the state was also assessed. The data were analyzed and with statistical tools and techniques like frequency, percentages and mean weighted scores.

RESULTS AND DISCUSSION

The respondents were enquired for their needs for information in dairy farming related aspects. The data shown in Table 1 reveals that information need was highest for disease control methods (80.00%) followed by feeding practices (67.50%), breeding aspects (62.50%), marketing (56.67%), general management practices (31.67%) and milk processing (26.67%). Sajeev et al., (2021) also inferred that majority of the respondents (54%) opined to have training in overall information about infectious diseases as the most important. This might be due to the fact that, rural farmers have inadequate knowledge about technical aspects of diseases such as etiology, symptoms, diagnosis, prevention and control measures of the diseases. The results were supported by the findings of Singh et al., (2016) & Subhash et al., (2015) who also reported need for breeding and feeding on the top ranks. However Subhash et al., (2015) reported the information need for health management on lower rank.

Table 1. Information needs for different areas of livestock production

Area	Percent
Disease control	80.00
Feeding	67.50
Breeding	62.50
Marketing	56.67
Management	31.67
Processing	26.67

**Multiple responses*

The analysis of the ease of availability of various information sources to acquire knowledge on livestock production to the dairy farmers (Table 2) indicated that among various sources of information, highest fraction i.e. 90.83 per cent respondents had training camp easily available to them. Trainings were followed by mobile as easily available source of information (MWS 2.72). Khan et al., (2019) also reported that 91.2 per cent of the farmers had availability of mobile phone and concluded that easy access to updated information and connectivity with stakeholders were the highest perceived benefits of mobile phone use by farmers. Fifty five per cent respondents referred TV as easily available source and 45 per cent referred it as uncertain in availability. It was considered uncertain by virtue of unsuitability of time of telecast of programme. Untimely access to information was also reported as the major problem among Pakistani farmers by Naveed and Anwar (2013). Nearly half of the respondents i.e. 47.50 per cent respondents also considered newspapers easy in availability and 51.67 per cent referred it uncertain in availability, as articles on animal feeding didn't appear frequently and might not address specific problem. Books and magazines were easily available to 45.83 per cent respondents. VO/ field veterinarian and neighbours appeared next with 40.83and 37.50 per cent respondents, respectively rating them easily available. Lesser frequency of easy availability was noted for association meetings (1.67%), leaflet and radio (4.17% each) and computer (6.67%).

Table 2. Availability and preference for usage of various information sources

Information source	Mean weighted score	
	Availability (Score range 1-3)	Preference (Rank range 1-6)
Training	2.91	5.75
Camp	2.43	3.05
Association meeting	1.78	1.63
Veterinary Officer	2.33	4.17
Neighbour/friend	2.38	1.98
Newspaper	2.47	2.81
Leaflet	1.53	1.14
Books/magazine	2.46	3.38
Television	2.55	2.15
Radio	1.63	1.00
Mobile	2.72	4.83
Computer	1.72	1.13

Mean weighted scores for each media were calculated and on the basis of which it was concluded that availability of training ranked first (MWS 2.91) followed by Mobile (MWS 2.72), TV (MWS 2.55), newspaper (MWS 2.47), books/magazines (MWS 2.46), camp (MWS 2.43), neighbor/friend (MWS 2.38), VO (MWS 2.33) association meeting (MWS 1.78), Computer (MWS 1.72), radio (MWS 1.63) and leaflet (MWS 1.53). Although farmers may have a number of information sources and channels available to them, they prefer some of them (Gunawardana and Sharma, 2006). The preference for usage of various available media was assessed on the basis of ranks assigned by respondents (Table 2). Mean weighted scores depict that preference for training and mobile both ranked at top (MWS 5.75) and (MWS 4.83) respectively.

Table 3. Frequency of contact with Extension agents

Extension Agents	Frequency of contact			
	Very Frequently	Frequently	Occasional	Seldom
Consultation for health problem (%)				
Veterinary Officer	36.67	28.33	26.67	8.33
Dairy Development Officer	5.83	5.83	26.67	60.00
University scientist	9.17	15.83	15.00	60.00
Krishi Vigyan Kendra scientist	24.17	36.67	18.33	20.83
Veterinary Inspector	49.17	17.50	26.67	6.67
Consultation for knowledge seeking (%)				
Veterinary Officer	17.50	14.17	37.50	30.83
Dairy Development Officer	0.00	0.83	1.67	97.50
University scientist	15.83	37.50	30.83	15.83
KVK scientist	40.00	24.17	18.33	17.50
Veterinary Inspector	36.67	28.33	26.67	8.33

Preference for training owes to its personal linkage interaction. Preference for mobiles owes to its availability. VOs ranked third (MWS 4.17) in preference inspite of the fact that their availability was very low. This could be attributed to the fact that VOs can be easily approached for routine problems but lack of availability of VO/ field veterinarians on holidays may limit their preference (Galadima, 2014). Kumar and Singh (2017) also reported that high percentage (80.13%) of dairy farmers contact VOs for seeking knowledge about animal husbandry practices in Punjab. Training, mobile and VOs were followed by books and magazines (MWS 3.38), camp (MWS 3.05), newspaper (MWS 2.81), TV (MWS 2.15), neighbour and friend (MWS 1.98), association meet (MWS 1.63), leaflet (MWS 1.14), computer (MWS 1.13) and radio (MWS 1.00). Data depicts that apart from mobile, interpersonal sources predominated in preference. Salleh and Hassan (2011) also observed that interpersonal sources were preferred more than mass media due to frequency and the quality of interpersonal communication that occur between rural community and interpersonal sources.

Veterinary officers (VO), Dairy development officers (DDO), University scientists, KVK scientists and Veterinary Inspectors (VI) are the public sector extension workers and can play immensely under field conditions. It is of utmost importance to assess the frequency of contact/approach by dairy farmers for animal health problem and for seeking knowledge about livestock production. The assessment (Table 3) depicted that Veterinary Inspectors (VIs) were the foremost option for seeking help regarding health problem as 49.17 per cent farmers contacted them very frequently followed by VOs (36.67%), KVK Scientists (24.17%), university scientists (9.17%) and DDO (5.83%). DDOs and university scientists didn't seem to be the choice for health problem as they were seldom contacted by 60 per cent respondents each. The doorstep availability of VIs seemed to be the reason behind this.

Trend was quite different in knowledge seeking because major fraction (40.00%) of respondents contacted KVK scientists very frequently followed by VIs (36.67%), VOs (17.50%) and university scientists (15.83%). DDO were seldom contacted by 97.0 per cent farmers and none contacted them very frequently. Data portrays that after KVK, animal husbandry department's VIs and VOs play immense role as extension workers. Gopi et al., (2018) also inferred that Veterinarians followed by Para veterinarians were the most useful personal cosmopolite source for the farmers while the university scientists were the least useful cosmopolite information source in the study area. Contrary to this, Kumar and Singh (2017) reported that every fifth farmer (21.85%) contacted university expert for seeking information while KVK scientists were approached by 2.65 per cent dairy farmers. Sarnaik et al., (2020) found that a larger proportion (57.50%) and nearly one third (30.83%) of the respondents perceived that extension service of KVK was 'useful' and 'more useful' for them, respectively.

In the era of internet, training, VOs and print media were considered most effective source of information (Table 4). Trainings were considered to be the most effective sources due to the reasons

Table 4. Perceived effectiveness of information sources

Information source	Effectiveness of information sources				Mean weighted score	Rank
	Most effective	Effective	Less effective	Not effective		
Training	85(70.83)	32(26.67)	3(2.50)	0(0.00)	3.68	I
Camp	0(0.00)	64(53.33)	56(46.67)	0(0.00)	2.53	VII
Association meet	4(3.33)	29(24.17)	85(70.83)	2(1.67)	2.29	VIII
Veterinary officer	21(17.50)	88(73.33)	9(7.50)	2(1.67)	3.07	II
Neighbour/friend	1(0.83)	70(58.33)	45(37.50)	4(3.33)	2.57	VI
Newspaper	0(0.00)	84(70.00)	36(30.00)	(0.00)	2.70	IV
Leaflet	0(0.00)	29(24.17)	91(75.83)	0(0.00)	2.24	IX
Books/magazine	3(2.50)	89(74.17)	28(23.33)	0(0.00)	2.79	III
TV	1(0.83)	78(65.00)	39(32.50)	2(1.67)	2.65	V
Radio	0(0.00)	28(23.33)	87(72.50)	5(4.17)	2.19	XI
Mobile	21(17.50)	49(40.83)	43(35.83)	7(5.83)	2.70	IV
Computer	8(6.67)	17(14.17)	86(71.67)	9(7.50)	2.20	X

Figures in parenthesis indicate Percentage

of face-to-face interaction, practical experience, follow up of guidance which is not feasible on any other mode. This was contrary to the findings of Singh et al., (2016) who ranked fairs/melas, television and newspapers on the top three ranks. Rank IV was shared by newspaper and mobile (MWS 2.70). Despite the fact that none of the respondent marked newspaper as most effective but 70 per cent considered it effective, hence it scored high. Mobile was labeled as most effective by 17.50 per cent and effective by 40.83 per cent dairy farmers. Inspite of being easily accessible and available, lack of interaction, practical exposure, area specific solution to the problem, language, trustworthiness of information and issues of internet cost and speed make it just effective and not the most effective one (Mittal and Mehar, 2012). Khan et al., (2019) reported that in spite of availability to 91.2 per cent respondents, farmers' limited aptitude of Mobile phone usage and lack of awareness of information sources were major constraints in farm-related use of the Mobile phone. This was supported by findings of Kumar and Singh (2017) who also reported that apart from hinges of wrong information and reliability of information, 33.77 per cent of the dairy farmers faced language barrier in accessing information. Untimely access to information, low education and language barrier were also reported as the major problems amongst Pakistani farmers by Naveed and Anwar (2013). With MWS of 2.20 and 2.19 radio and computer were ranked at X and XI respectively. Computer was ranked less effective by 71.67 per cent respondents, probably due to lack of easy availability, accessibility and cost. This was supported by Khan et al., (2012) who reported availability of computer internet in merely 1.52 per cent rural households. None of the respondents referred radio as most effective and 72.50 per cent referred it as less effective.

On the basis of mean weighted scores, the table depicted that dairy farmers perceived training as the most effective source to acquire knowledge on dairy farming technologies followed by field veterinarians/VOs, book/ magazines, mobile & newspaper, TV, neighbours/ friends, camp, association meeting, leaflet, computer and radio.

CONCLUSION

The results of the study found that disease control is the major information need of dairy farmers followed by feeding and breeding management. To access information related to dairy farming, training, mobile phone and television were the most easily available sources. It may be due to the fact that these sources have the benefits of easy accessibility to updated information and connectivity with stakeholders. Training, mobile and Veterinary Officers were the most preferred sources of information. Preference for training owes to its personal linkage interaction. Preference for mobile phones owes to its availability. VOs are easily approached for routine problems as they are easily available at field level to the farmers. Perceived effectiveness was found maximum for training, Veterinary Officers and television due to the fact that these sources have comparatively more face-to-face interaction, practical experience, follow up of guidance which is not feasible on any other mode. It is suggested that the extension agents should take maximum advantage of these most preferred and perceived effective sources of information to disseminate information regarding livestock production.

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