

Original Research Article

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Prioritisation of Information Demand of Dairy Farmers of Punjab

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ABSTRACT

For effective extension of technologies it is utmost important that it should be based on the needs of end users. As it is the basic principle of extension that any extension programme should be based on needs and interest of the client. In the present study 300 dairy farmers were selected from five districts of Punjab i.e. Ludhiana, Barnala, Bathinda, Tarn-Taran and Hoshiarpur, to assess their information needs. The findings revealed that most essential information needs were knowledge about infectious diseases (INI=89.00), prevention and control of mastitis (INI=86.33), identification of reproductive disorders (INI=83.00), concentrate formulation (INI=83.00), Timely heat detection (INI=81.67), control of ecto-parasite (INI=81.67) and knowledge about credit facilities (INI=81.67). Out of total areas health care perceived as most priority area (INI=78.33) followed by breeding (INI=74.67), feeding (INI=71.00), management (INI=68.00) and marketing (INI=66.33). emphasis must be given to these areas while developing strategies to disseminate technologies to the dairy farmers of this area.

Keywords

Information needs,
Dairy Farmers,
Correlation

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Introduction

In dairy, India has reached the production of 165.4 MT but still we are far behind in terms of productivity per animal from developed countries.. Low productivity of cattle and buffaloes owned by marginal and small dairy farmers in our country is often attributed to lack of innovations and low or non-adoption of innovations/improved production technologies (Triveni, 2016). Poor reach of the information to the farmers is major reason behind it. In present day agriculture, soft resources like knowledge and skills are as important as hard resources like inputs, and

sometimes more important. Quick dissemination of technological information from the research system to farmers in the field and reporting of farmers' feedback to the research system is one of the critical inputs in transfer of technology (Subhas *et al.*, 2015). For effective dissemination of the technologies it is very important to take care of needs of the farmers, which is also important for the scientist to initiate the research as per the farmer's needs. Need is basically as a gap between "what is" (present situation) and "what ought to be" (desired situation). Informational needs are basically incompetency felt by the farmers in dairy

farming activities and needs the technical advice from authentic sources for taking effective decision for action. Use of ICT can play an effective role in dissemination of need based information to the farmers. Study of information needs of the dairy farmers are very important in understanding the farming situations at field level as most of the time farmers themselves may not be aware that they are deficient in some information. Keeping that in mind present study was carried out with following objectives:

Assessment of information needs of dairy farmers;

To study the relationship between information needs and socio-economic and communication profile of the farmers.

Materials and Methods

Present study was carried out in five district of Punjab i.e. Ludhiana, Barnala, Bathinda, Tarn-Taran and Hoshiarpur. Multistage random sampling was adopted for selection of respondents. Three villages were selected from each district and twenty dairy farmers from each village making total of 300 dairy farmers for assessment of information needs especially for development of text messages to be disseminated through mobile. The data were collected through a pretested structured interview schedule. The information needs of the farmers were accessed in different areas of dairy farming i.e. breeding, feeding, health care management and marketing. Responses were taken on a 3 point continuum i.e. most essential, essential and least essential with their respected scores as 3 2 and 1. The dairy farmers were asked to indicate their preference in the respective areas and sub areas of dairy farming. In order to find out the priority area of information the mean score was calculated by multiplying the frequency number of respondents in each area with respective score

allotted to most essential, essential and least essential categories and summation. Ranking were done on the basis of Information Need Index calculated by following formula as per Patil and Kokate (2011) with slight modifications.

$$\text{Weighted Score (WS)} = (\text{MN} \times 3) + (\text{N} \times 2) + (\text{LN} \times 1)$$

$$\text{INI} = \frac{\text{Total Obtained score}}{\text{Maximum obtainable score}} \times 100$$

MN = Frequency of respondents opted for Most Essential

N = Frequency of respondents opted for Essential

LN = Frequency of respondents opted for Least Essential

To find out the relationship between independent variables and information needs correlation coefficient (r) was calculated and tested for level of significance.

Results and Discussion

Information needs related to breeding practice

A cursory look from the Table 1 indicates that identification of reproductive disorders (INI=83.00), Timely heat detection (INI=81.66) and selection of animals (INI=78.33) were at first second and third rank as per the priority of the farmers. As reproductive problems leads to huge economic losses and in absence of knowledge regarding it leads to poor production. Timely heat detection is very much important in dairy farms as a missed heat will lead to loss of 21 days production. Present finding is in agreement with Subash *et al.*, (2015) and Sharma (2016) who also reported that heat detection was most needed area as perceived

by majority of farmers. Similarly Teja (2013) reported that eighty percent farmers needed information on reproductive disorders and perceived it as important. It is very important to choose quality animals during purchase and farmers feel that they must have knowledge about different criteria like breed characteristics, record of dam and sire and parity of animals. Similar findings had also been reported by Subash *et al.*, (2015), Laldinpuii (2013) that selection of animals was mostly needed area of information by majority of farmers.

Further time of insemination (INI=73.00), age and weight at sexual maturity (INI=70.00), pregnancy diagnosis (INI=69.00) and knowledge of different dairy breeds (INI=67.66) were at fourth, fifth, sixth and seventh rank respectively. Right time of insemination/service will provide better conception rate leading to shorter calving interval. Education and awareness of farmers regarding this would result in more animals being inseminated at an optimal time and a higher pregnancy result. Similarly Raina *et al.*, (2017) revealed that insemination and its role (TNI=88.22) was indicated as most important information need of farmers. Meena and Fulzele (1997) also found pregnancy diagnosis and time of insemination were the needed area of training.

Information needs related to Feeding practices

Feeding of dairy animals is important part of dairy farming as feeding alone accounts for 70 percent of the expenses incurred for dairying and directly linked with production and reproduction of farm animals (Table 2).

Results indicate that concentrate formulation is most essential information need (INI=83.00) followed by feeding of by-pass fat (INI=76.67) and supplementation of mineral

mixture (INI=75.66). This may be due to that farmers want to know the formulation of concentrate ration at their home, as readymade concentrate might be costly for the farmers. Accordingly Subhas *et al.*, (2015) found most information need in feeding practice were preparation of balanced ration (51.7%), bypass feed technology (53.3%) and knowledge about mineral mixture (46.7%). Rajput *et al.*, (2012) reported that dairy farmers mostly required training regarding feeding of mineral mixture and legumes followed by balanced feed and its composition.

Other essential information needs like feeding of pregnant animals (INI=71.00), followed by silage making (INI=67.33), calf feeding (INI=62.00) and UMMB lick (INI=60.66) and were ranked as fourth, fifth, sixth and seventh. Information about feeding of pregnant animals is important as pregnancy ration is responsible for the calf growth and also for the production in coming lactation. Silage preparation is important technology and can be used specially during fodder shortage. Kale *et al.*, (2013) also reported that over three fourth of the respondents (78.00%) expressed their needs for training in feeding of pregnant cows/buffaloes and majority (60.00%) perceived silage making as needed area in which they need information.

Information needs related to health care practices

Health care management ensures the well-being of animals and reduces production losses due to diseases. Results of the information needs of dairy farmers in various health care practices are presented in Table 3. It can be viewed that knowledge about infectious diseases (INI=89.00) followed by prevention and control of mastitis (INI=86.33) and control of Ecto-parasites (INI=81.67) were the most essential information need expressed by farmers and ranked as first,

second and third respectively. This may be due to the fact that infectious diseases affect the dairy animals leading to morbidity and mortality, so farmers were keen to know about these diseases so that they can effectively protect their animals against these ailments. Mastitis is very common disease in farm animals specially high producing cattle that causes loss in milk production and also hampers the milk quality. Farmers interested to know about the preventive measures and its early detection to control this disease and can prevent their losses. In Punjab due to hot and humid climate external parasite caused big nuisance to the farm animals. So farmers interested to know about effective control of these parasites. Raina *et al.*, (2016) reported similar findings that majority of the respondents opined identification of common diseases (TNI= 97.33) was the major training area. Patil *et al.*, (2009) also found that majority of the farmers (71.56 %) expressed needs to have training in information about infectious diseases as most important. Durgga and Shubhadra (2009) also reported identification of symptoms of important disease as most needed area for skill training. The farm women might have been interested to know about the control and identification of important diseases. According to Jacob and George (2013) Symptoms of common diseases was the most needed training area expressed by majority of the respondents (TNI=93.33) followed by control of ectoparasites (TNI=86.67), deworming (TNI=76.67), vaccination (TNI=73.33), identification and isolation of sick animals (TNI=63.33).

Further first aid treatment (INI=78.00), vaccination schedule (INI=72.33), deworming (INI=71.67) and isolation of sick animals (INI=68.33) fell in essential category information needs and were ranked as fourth, fifth, sixth and seventh respectively as these practices are important and needed routinely in animals health care managements. Teja (2013) reported that majority of women self-

help group (WSHG) members (85.56%) need information about treatment of simple ailments.

Information needs related to management practices

Management of dairy animals is a key to success of dairy farm as efficient management will lead to improve quality and quantity of production and is necessary for running a dairy farm as profitable venture. Information needs of dairy farmers in various management practices are presented in Table 4.

Results indicate that seasonal management of dairy animals (INI=76.33) followed by clean milk production (INI=74.67) and care at calving (INI=73.00) were perceived as essential information needs and were ranked first, second and third respectively. Farmers were keen to know about management of dairy animals in different seasons due to encounter with extreme climate, season plays important role in animal's management. Increase awareness of consumers regarding milk quality, farmers was also interested to know about different measures to produce clean milk. Calving is important stage of farm animals management and farmers need information about care at the time of calving. Rajput *et al.*, (2012) also found care at calving as essential area for training as perceived by majority of farmers. Subash *et al.*, (2015) reported that 65 percent of farmers expressed clean milk production as most important information need.

Other management practices to which farmers were interested and expressed as essential were housing of animals (INI=69.67) followed by weaning (INI=67.33) and care of new born calves (INI=66.67) and were ranked as fourth, fifth and sixth respectively. Interest in information regarding proper housing of animals may be due to that it is an important area that prevents animals against extreme

climatic conditions like direct sunshine, cold etc. Uncomfortable housing will lead to stress in animals and results production losses. Raina *et al.*, (2016) reported that housing layout design (TNI= 66) is important training area as perceived by the farmers. Dehorning/disbudding of calves were

perceived as least essential area (INI=49.33) and was rank at the last. This may be due to the fact that most of the buffalo farmers do not practice disbudding in buffalo calves and in crossbred, majority of farmers already followed this practice.

Table.1 Information needs related to breeding practices

S. No.	Breeding practices	Weighted score	Mean score	INI	Rank
1	Selection of animals	705	2.35	78.33	III
2	Knowledge about dairy breeds	610	2.03	67.66	VII
3	Timely Heat detection	737	2.45	81.66	II
4	Age & weight at sexual maturity	630	2.10	70.00	V
5	Time of insemination	659	2.19	73.00	IV
6	Pregnancy diagnosis.	621	2.07	69.00	VI
7	Identification of reproductive disorders	748	2.49	83.00	I

Table.2 Information needs related to feeding practice

S. No.	Feeding practices	Weighted score	Mean score	INI	Rank
1	Concentrate formulation	749	2.49	83.00	I
2	Feeding of calf	559	1.86	62.00	VI
3	Supplementation of mineral mixture	682	2.27	75.66	III
4	Feeding of pregnant animals	641	2.13	71.00	IV
5	By-pass fat	690	2.30	76.67	II
6	UMMB Lick	548	1.82	60.66	VII
7	Silage making	607	2.02	67.33	V

Table.3 Information needs related to health care practices

S. No.	Health care practices	Weighted score	Mean score	INI	Rank
1	Knowledge about infectious diseases	801	2.67	89.00	I
2	Deworming	645	2.15	71.67	VI
3	Isolation of sick animals	615	2.05	68.33	VIII
4	Ectoparasite control	748	2.49	81.67	III
5	Vaccination schedule	651	2.17	72.33	V
6	First aid treatment	704	2.34	78.00	IV
7	Prevention and control of mastitis	777	2.59	86.33	II

Table.4 Information needs related to management practices

S. No.	Management practices	Weighted score	Mean score	INI	Rank
1	Care at calving	659	2.19	73.00	III
2	Care of new born calves	601	2.00	66.67	VI
3	Dehorning/disbudding	445	1.48	49.33	VII
4	Seasonal management	687	2.29	76.33	I
5	Weaning of calves	608	2.02	67.33	V
6	Clean milk production	672	2.24	74.67	II
7	Housing of animals	627	2.09	69.67	IV

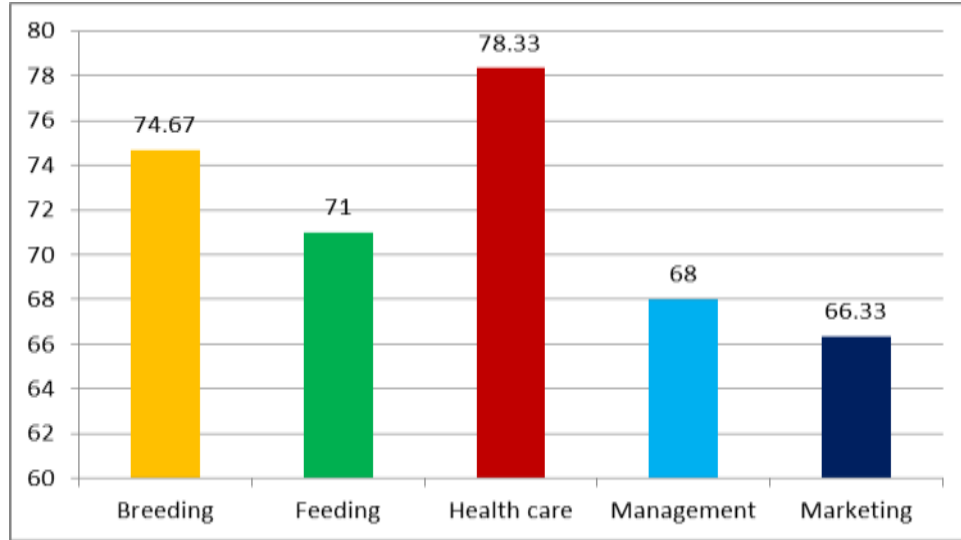
Table.5 Information needs related to marketing practices

S. No.	Marketing practices	Weighted score	Mean score	INI	Rank
1	Knowledge about credit facilities	737	2.45	81.67	I
2	Government schemes (insurance)	670	2.23	74.33	II
3	Milk testing techniques	449	1.49	49.67	V
4	Marketing Channels	586	1.95	65.00	III
5	Maintenance of records	556	1.85	61.67	IV

Table.6 Relationship between independent variables and Information needs of respondents in various practices

Independent Variable	Correlation Coefficient ' r' value
Age	-.201**
Education	0.069ns
Family size	.228**
Family type	0.103ns
Land holding	.371**
Herd size	.519**
Milk Production	.428**
Milk Sale	.400**
Training	0.12ns
Mass Media Exposer	.386**
Extension Contacts	.510**

Fig.1 Information needs in overall areas of dairy farming



Information needs related to marketing practices

Results on information needs of farmers regarding various marketing practices are presented in Table 5.

From the perusal of Table 5 it can be observed that majority of farmers perceived knowledge about credit facilities (INI=81.67) as most essential followed by Government schemes (INI=74.33) and marketing channel for milk and milk products (INI=65.00) and rank wise they appeared as first, second and third respectively. This preference of farmers may be due to requirement of regular investments in dairy business to meet out daily expenses on feeds, medicine etc. moreover farmers may also have interest to expand their farm. For these, they require credit and they want to have information about getting credit for dairy business. Similarly, information about government schemes and subsidies may not reach to them timely.

Present findings are in agreement with the earlier findings of Sharma (2016) and Singh *et al.*, (2016), they observed that majority of

farmers were interested to get information about government subsidies for dairy farming. Further, farmers expressed importance of record keeping (INI=61.67) as essential whereas milk testing were perceived as least essential (INI=49.67). Present preference of the farmers may be due to that by record maintenance they can better manage their farms and take decisions accordingly. While farmers may not be interested to test their milk as they might not perceived benefits of milk testing.

From figure 1, it was observed that out of total areas health care related practices perceived as most priority area (INI=78.33) followed by breeding (INI=74.67), feeding (INI=71.00), management (INI=68.00) and marketing (INI=66.33). It may be due to that farmers mostly encounter animal health problem and also reproductive disorders and due to technical aspect, they had comparative low knowledge on these areas, therefore they prefer to have more information about these practices. Present findings were in conformity of Gupta and Tripathi (2002) and Gangil *et al.*, (2005) they reported that health care and breeding were priority areas for training.

Relationship between socio-economic, communication profile of the respondents and information needs

Correlation coefficients between socio-economic, communication profile of the respondents and information needs are presented in Table 6. Results reveal that age of the respondents has negative and significant ($P < 1\%$) correlation with their information needs. This means that younger farmers need more information on dairy practices as they are less experienced and expressed more desire for information. It was also observed that information needs had positive and significant relationship with land holding, herd size of the respondents. That means respondents with larger size of land and more no of animals need more information than the respondents with small land holding and smaller herd size. This could be due to the fact that there could be the chance to increase the size of their dairy farm, if the land holding is more leading to higher returns from dairy farming. Respondents with larger herd size have higher information needs may be due to more requirement of information to manage larger herds.

Similar pattern of relationship i.e. positive and significant ($P < 1\%$) relationship has also been observed in between information needs and milk production, sale, mass media exposer and extension contacts. It could be due to the respondents with higher milk production and sale seeks more information, to maximize their profit, from different sources i.e. through mass media and extension contacts and they might not be satisfied with the information received and have more interest to gain information from reliable and credible source. i.e. GADVASU, Ludhiana. Okwoche *et al.*, (2015) reported that the probability of farmers having interest in receiving training increases with farm

income, education, herd size, farming experience and no. of extension contacts.

Correlation coefficient (r) value for information needs was non-significant at 1 per cent and 5 per cent with education, family type and training of respondents. That means these variables do not affect the information needs of the farmers. From the present study it can be concluded that among various dairy husbandry practices identification of reproductive problems, regular heat detection, concentrate formulation, knowledge about infectious diseases, prevention and control of mastitis, ecto-parasites control and knowledge about credit facilities were most essential needs of dairy farmers. Land holding, herd size, milk production, milk sale, mass media exposure and extension contacts were the major contributory factors in deciding the information needs of the farmer. Dairy farmers should have access to these needed information for better management of their animals and to take correct decisions at right time. Identification of information needs enables the extension agencies to make effective strategies for dissemination of technologies.

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