A study on information needs of dairy farmers in hill region of Uttarakhand

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Abstract: Dairy farming is an indispensable economic activity in the rural hill region of Uttarakhand which is closely intervened with farming systems. Despite its relative importance contradicting facts appear in case of milk production and milk productivity in hill region Uttarakhand. The milk production of the state is 1.656 MT which contributes only 1.15 percent to dairy industry of the entire nation. There is huge information gap which is major problem in dairy farming. Moreover, information is said to be appropriate when are based upon local situation meeting their basic dairy needs. Against this backdrop, the present study was conducted to assess the information needs of dairy farmers. The study revealed that majority of the respondents had moderate information needs on fodder production (81.70%), animal health (66.7%) and input & record keeping reported by 66.67 percent respondents. All the respondents ‘not needed’ the information regarding preparation of milk products of dairy animals. Majority of the respondents (60.83%) had moderate overall information needs. It was further indicated that land holding, herd size, material possession, achievement motivation and scientific orientation were negatively and highly significantly correlated with information needs of dairy farmers.

Keywords: Information needs, Dairy farmers, Hill region

Introduction

Dairy farming is an integral part of agriculture in hill region of Uttarakhand where people have been performing it for their livelihood security. Every household keeps either a cow or a buffalo, irrespective of its economic viability. Dairying is carried out in millions of households across the state, providing employment to the marginal and landless farmers especially. Presently, Uttarakhand is coming up with a vast web of small-scale dairy and milk collection centers. Milch cow and buffalo are reared at all altitudes and they have high potential to develop dairy farming. The other important factors that promote dairy farming in the Uttarakhand Himalaya are vast forest (59.7%), grazing land (3.4%) and ample water (Sati, 2016). These factors make the state potential area for milk production but bigger question arises is why dairy farmers of Uttarakhand state are still contributing only 1.15 percent to dairy industry and the annual average income of livestock owners in the state is ₹ 13,560 (ULDB, 2001) only. At present, many public and private institutions in India are coming up with improved package of practices for dairy development but these improved practices do not reach dairy farmers. There lies a huge information gap which needs to be bridged. Sharma and Verma (2017) found that the farmers had low awareness about various aspects i.e. causes, management, control and preventive measures of abortion in dairy animals. Moreover, Singh et al. (2004) in Almora found that farmers are not aware of recent development in area of animal nutrition, particularly improved utilization of existing feed resources, strategic supplementation of roughage based diets, use of common salt and mineral mixture for improving animal health, production, reproduction, and feeding of colostrum to newly born calves. Dairy farmers lack information on many aspects of improved dairy practices and hence, it remains unprofitable for them. It is said in every sphere of life information is inevitable component which has to be acquired, stored, retrieved, processed and disseminated. Similarly, agriculture information is undoubtedly important for agriculture development (Adio et al. 2016). It is observed that the information dissemination system is supply driven instead of being demand driven. The programs planned at the top aren’t in tune with the needs of local community (Hedge, 2012). It emphasizes that dairy farmers are not getting right information at right time for taking right decision and reduce
uncertainties related to dairy farming. Simultaneously, information is said to be appropriate when are based upon local situation meeting their basic dairy needs. Hence, transfer of technology can never succeed without knowing the information needs of farmers. The assessment of information needs can only justify the relevance of plenty of information available.

Against this backdrop, the present study was conducted with the following objectives: (1) To assess the information needs of dairy farmers (2) To study relationship between socio-economic and psychological characteristics and information needs of dairy farmers.

Material and Methods

The present study was carried out in Almora district of Uttarakhand. Almora district was purposively selected as locale of the study because from livestock wealth and milk production point of view, it is a well-endowed district with highest milk production and dairy animal population among all hill districts of Uttarakhand. Dwarahat and Tarikhet block were randomly selected through Simple Random Sampling using chit method. Two villages were selected from each selected block through Simple Random Sampling using chit method for accessing information needs of dairy farmers. Total 120 respondents were selected from all the four villages through Probability Proportionate to Size (PPS) sampling. The data was collected with the help of pre-tested well-structured interview schedule. Frequency, percentage, arithmetic mean, standard deviation, coefficient of correlation and test of significance were used to analyze the data for meaningful interpretation.

Results and Discussion

Information needs of dairy farmers

Information needs of dairy farmers was assessed in eight key areas on three-point continuum i.e. most essential, essential and least essential with their respective score as 3, 2, and 1. The respondents were asked to indicate any of the three alternative responses against each selected modern practice. These eight key areas were made on the basis of literature review and expert consensus. The areas for taking responses on information need was taken from Gupta and Tripathi (2002) which was further modified based on expert review.

Information needs of dairy farmers related to feeding

The findings on information needs of dairy farmers related to feeding indicate that majority of the respondents acknowledged information need on ‘feeding of dairy animals’ as ‘most needed’. The responses were taken on four aspects viz., information on artificial insemination, and time of insemination, pregnancy diagnosis, and identification of heat symptoms. It was observed that none of the farmers took on four aspects viz., information on artificial insemination, and time of insemination, pregnancy diagnosis, and identification of heat symptoms. It was observed that none of the farmers lacked information on the mentioned breeding practices for dairying. This may be due the fact that breeding is considered as an important aspect of dairying in villages and so, all the information required for breeding was transferred generations after generations properly.

Information needs of dairy farmers related to fodder production

Fodder production is one the major constraint to dairy farming in hills of Uttarakhand. The findings related to information needs of dairy farmers on fodder production (Table 3) shows that majority of the respondents acknowledged information need on improved varieties of fodder seeds and fodder trees (83.30%), time and method of sowing (83.30%), nutrient management of fodder crop (83.30%), irrigation and harvesting (83.30%) and rotation of fodder crops (82.50%). In case of silage preparation, it was reported 70.83 percent respondents acknowledged information need as ‘most needed’ while 29.17 percent reported information need as ‘not needed’. Also, none of the respondent needed information regarding ‘conservation/storage of fodder crops’. It may be due to the fact that they already perform various practices of storing odder crops and also, they have structures for storage of fodder as and when needed.

The results are in consonance with the findings of Sah and Fulzale (1999) who reported medium information needed on ‘fodder rotation for round the year cultivation of green fodder’.

Information needs of dairy farmers related to health care practices

Data regarding information needs of dairy farmers on healthcare practices is depicted in Table 4. It was observed that majority of the respondents acknowledged information need on common diseases of animals (70.83%), contagious disease and their symptoms (73.33%), vaccination schedule (71.67%), first aid treatment
(75.00%), deficiency disease of animals and their symptoms (73.33%) whereas information on deworming (81.67%), information about ectoparasites and their control (87.50%) and care of sick animals (70.83%) was acknowledged as ‘not needed’. Findings point out that information on all health care practices is either ‘needed’ or ‘not needed’ except ‘information about common diseases of animals’.

**Information needs of dairy farmers related to management practices**

The findings regarding information needs of dairy farmers on management practices (Table 5) reveals that majority of the respondents ‘not needed’ information on housing plan (90.00%), care of newborn calves (95.00%), care at calving (95.00%), dehorning of calves (64.17%), castration (98.33%), clean milk production (85.00%) and milk testing techniques (75.00%). None of the respondents required information regarding weaning. Findings on management practices point out that none of the respondent ‘most needed’ information on it. It was the area with least information gap which was observed to be most prevalent among respondents. Majority of the respondents marked different aspect of management practices in ‘not needed’ category.

**Information needs of dairy farmers related to preparation of milk products**

It was reported that all the respondents ‘not needed’ the information regarding ‘preparation of milk products’ of dairy animals. This may be due to the fact that they already knew about preparation of milk products or they were not interested in commercial production of milk products like ice-cream, sweets, etc.

**Information needs of dairy farmers related to input supplies and record keeping**

Data on information needs of dairy farmers on input supplies and record keeping (Table 6) reveals that majority of the respondents acknowledged information as ‘needed’ on information about credit facilities (57.50%), maintenance of records (69.17%). Findings on ‘marketing of milk’ reveal that none of the respondents ‘most needed’ information on the topic.

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**Table 1** Distribution of respondents on the basis of information needs related to breeds (n=120)

| S.No. | Component                    | Most Needed | Needed | Not Needed |
|------|------------------------------|-------------|--------|------------|
| 1.   | Types of breed               | 3 (2.50%)   | 95 (79.17%) | 22 (18.33%) |
| 2.   | Selection of breed           | 25 (20.83%) | 93 (77.50%) | 2 (1.67%) |
| 3.   | Morphology of animal         | 27 (22.50%) | 91 (75.83%) | 2 (1.67%) |
| 4.   | Resistance towards abiotic and biotic factors | 29 (24.17%) | 91 (75.83%) | 0 (0%) |
| 5.   | Milk Production of animal    | 28 (23.33%) | 92 (76.60%) | 0 (0%) |

*Figures in parenthesis indicate the percentage

**Table 2** Distribution of respondents on the basis of information needs related to feeding (n=120)

| S. No. | Component                         | Most Needed | Needed | Not Needed |
|-------|-----------------------------------|-------------|--------|------------|
| 1.    | Preparation of balanced ration    | 18 (15.00%) | 74 (61.67%) | 27 (22.50%) |
| 2.    | Feeding of newly born calf        | 11 (9.10%)  | 103 (85.83%) | 6 (5.00%) |
| 3.    | Feeding of mineral mixture        | 18 (15.00%) | 93 (77.50%) | 9 (7.50%) |
| 4.    | Feeding of pregnant animals       | 15 (12.50%) | 96 (80.00%) | 9 (7.50%) |
| 5.    | Feeding of sick animals           | 15 (12.50%) | 96 (80.00%) | 9 (7.50%) |

*Figures in parenthesis indicate the percentage

**Table 3** Distribution of respondents on the basis of information needs related to fodder production (n=120)

| S. No. | Component                                           | Most Needed | Needed | Not Needed |
|-------|-----------------------------------------------------|-------------|--------|------------|
| 1.    | Information about improved varieties of fodder seeds and fodder trees | 16 (13.33%) | 100 (83.30%) | 4 (3.33%) |
| 2.    | Time and method of sowing                           | 16 (13.33%) | 100 (83.30%) | 4 (3.33%) |
| 3.    | Nutrient management of fodder crop                  | 16 (13.33%) | 100 (83.30%) | 3 (2.50%) |
| 4.    | Irrigation and harvesting                           | 16 (13.33%) | 100 (83.30%) | 3 (2.50%) |
| 5.    | Rotation of fodder crops                            | 18 (15.00%) | 99 (82.50%) | 3 (2.50%) |
| 6.    | Silage preparation                                  | 85 (70.83%) | 35 (29.17%) | 0 (0%) |
| 7.    | Conservation/storage of fodder crops                | 0 (0%)      | 0 (0%)  | 120 (100%) |

*Figures in parenthesis indicate the percentage
respondent lack information about it. It emphasizes that respondents are well aware of market for disposing of milk. This may be due the fact that milk cooperative was well functioning in the village. The findings on information needs regarding ‘government schemes and subsidies’ reveal that majority of the respondents (75.00%) ‘most needed’ information pointing out towards existing information gap on government scheme and subsidies.

**Information regarding overall information needs**

Findings on overall information needs indicates majority of the respondents (66.67%) had moderate overall information needs while 20.83 percent respondents had low information need followed by 12.50 percent respondents had high information need regarding dairy farming.

**Relationship between independent variables and information needs of the dairy farmers**

Data regarding relationship between independent variables and information needs of dairy reveals that land holding, herd size, material possession, achievement motivation and scientific orientation were negatively and highly significantly correlated with information needs of dairy farmers. It indicates that farmers having low land holding and small herd size had high need for information whereas farmers having large land holding and big herd size already had much information related to improve dairy farming. This may be due to the fact that farmers having small land holding never grew fodder in field due to space and so they need information in fodder production. Similarly, it was found that farmer having high material possession required less information related to dairy farming whereas farmers having low material possession required high information need. Moreover, lower achievement motivation of farmer towards dairy farming indicated higher information need and lower scientific orientation also indicated towards higher information need of farmer. This point out that information gaps is more for farmers having low achievement motivation.

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### Table 4: Distribution of respondents on the basis of information needs related to health care practices (n=120)

| S. No. | Component                                      | Most Needed | Needed   | Not Needed |
|--------|-----------------------------------------------|-------------|----------|------------|
| 1.     | Information about common diseases of animals  | 33 (27.50%) | 85 (70.83%) | 2 (1.67%) |
| 2.     | Deworming                                      | 0 (0%)      | 22 (18.33%) | 98 (81.67%) |
| 3.     | Information about ectoparasites and their control | 0(0%)    | 51 (4.50%) | 105 (87.50%) |
| 4.     | Care of sick animals                           | 0 (0%)      | 35 (29.16%) | 85 (70.83%) |
| 5.     | Contagious disease and their symptoms          | 0 (0%)      | 88 (73.33%) | 32 (26.67%) |
| 6.     | Vaccination schedule                           | 0 (0%)      | 86 (71.67%) | 34 (28.33%) |
| 7.     | First aid treatment                            | 0 (0%)      | 90 (75.00%) | 30 (25.00%) |
| 8.     | Deficiency disease of animals and their symptoms | 0 (0%)    | 88 (73.33%) | 32 (26.67%) |

*Figures in parenthesis indicate the percentage

### Table 5: Distribution of respondents on the basis of Information needs related to management practices (n=120)

| S. No. | Component                                      | Most Needed | Needed   | Not Needed |
|--------|-----------------------------------------------|-------------|----------|------------|
| 1.     | Housing plan                                    | 0 (0%)      | 12 (10.00%) | 108 (90.00%) |
| 2.     | Care at calving                                 | 0 (0%)      | 6 (5.00%) | 114 (95.00%) |
| 3.     | Care of newborn calves                         | 0 (0%)      | 6 (5.00%) | 114 (95.00%) |
| 4.     | Dehorning of calves                            | 0 (0%)      | 43 (35.83%) | 77 (64.17%) |
| 5.     | Castration                                     | 0 (0%)      | 2 (1.67%) | 118 (98.33%) |
| 6.     | Weaning                                        | 0 (0%)      | 0 (0%) | 120 (100%) |
| 7.     | Clean milk production                          | 0 (0%)      | 18 (15.00%) | 102 (85.00%) |
| 8.     | Milk testing techniques                         | 0 (0%)      | 30 (25.00%) | 90 (75.00%) |

*Figures in parenthesis indicate the percentage

### Table 6: Distribution of respondents on the basis of information needs related to dairy farming related to input supplies and record keeping (n=120)

| S. No. | Component                                      | Most Needed | Needed   | Not Needed |
|--------|-----------------------------------------------|-------------|----------|------------|
| 1.     | Information about credit facilities            | 34 (28.33%) | 69 (57.50%) | 17 (14.17%) |
| 2.     | Maintenance of records                         | 0 (0%)      | 83 (69.17%) | 37 (30.83%) |
| 3.     | Marketing of milk                              | 0 (0%)      | 0 (0%) | 120 (100%) |
| 4.     | Information about government schemes and subsidies | 90 (75.00%) | 24 (20.00%) | 6 (5.00%) |

*Figures in parenthesis indicate the percentage
The results find consonance with the findings of Devaki and Senthilkumar (2013) who reported that herd size had negative and significant relationship with information needs of dairy farmers. Similar results were found by Singh and Sharma (2016) who found significant relationship between information needs of dairy farmers and their herd size and age.

Conclusions

The study concludes that farmers needed moderate information on all the aspect of improved dairy practices. Dairy farmers in hills well acquainted with conservation/storage of fodder crops and deworming but they needed information on about preparation of silage, resistance of animals towards abiotic and biotic factors and milk production of different breeds. Furthermore, management practice is the area with least information gap.

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