Training Needs of Dairy Farmers

Vishal Raina[1], Neelesh Sharma[2]*, Shalini Khajuria[3], Kamal Kumar[2], Sunil Choudhary[2], Zul-i-huma Syed[2] and Kafil Hussain[2]

[1]Junior Agriculture Extension Officer, Department of Agriculture Jammu, India
[2]Division of Veterinary Medicine, F.V.Sc. & A.H., SKUAST-J, R.S. Pura, Jammu, India
[3]Ph.D. Scholar, Division of Soil Science and Agricultural Chemistry, Faculty of Agriculture, SKUAST-J, Chatha, Jammu, India

*Corresponding author: drneelesh_sharma@yahoo.co.in

Abstract

The training can be more valuable and significant when analysis of training needs prior to beginning of training programmes and imparting knowledge according to the needs of the farmers. A list of seven major dairy practices/components was prepared to know training need index (TNI) of the dairy farmers of Jammu district. Under each major component, specific and relevant training need items were collected and systematically incorporated in to the interview schedule and administered. The results revealed that even in the most popular areas of training, there was an inadequacy. According to livestock owners perceived training needs, animal health (I), followed by marketing and financial management (II), breeding and general management (III), milking hygiene practices (IV), animal nutrition (V), animal welfare management (VI) and housing and environment management (VII) respectively. Therefore, the extension agencies and training imparting agencies in border belts of Jammu district has to give special emphasis on health care, feeding and breeding during dairy farmers training for increasing the livestock productivity and improving the living standards of the farmers. The various dairy extension agencies have to re-orient their trainings based on these findings to reduce the existing technological and adoption gap among the dairy farmers.

Highlights

- Landless and marginal farmers dependency is increasing towards dairy farming due to shrinkage of agriculture land.
- Timely training at farmers door step on animal health can significantly improve their income and increase their interest in the livestock farming.

Keywords: Training needs index, dairy practices and farmers

Training is a circular process that begins with needs identification and after a number of steps ends with evaluation of the training activity. Training is a process of acquisition of new skills, attitude and knowledge in the context of preparing for entry into a vocation or improving ones productivity in an organization or enterprise. A change or deficiency in any step of the training process affects the whole system. Effective training requires a clear picture of how the trainees will need to use information after training in place of local practices what they have adopted before in their situation. Lynton and Pareek (1990) stated that training consists largely of well-organized opportunities for participants to acquire necessary understanding and skill. Farmer training is directed towards improving their job efficiency in farming. The kind of education we call as training is not for knowing more but behaving differently. Farmer training is education that most often takes place outside formal learning institutions. It differs from education in schools because it is geared towards adult learning. Training needs assessment is one of the crucial steps towards identifying the area of farmers, interest, design and development of curriculum that can best suit to the existing real conditions of farmers. Caffarela (2002) noted that a

systematic process of farmers training must include; needs assessment, goal and objectives setting, organizing instructional methods and techniques, monitoring and evaluation.

Davis and Rylance (2005) suggested that training focused on enterprise skills, such as market analysis, distribution and business management, would support small scale farmers in identifying the technologies that would encourage them most and would help them to participate in agricultural innovation. Importance of training needs to the dairy farmers is progressively realized all over the world. It is observed that dairy farmers play a significant role not only in agriculture but also in the efficient use of animal husbandry practices. Dairy farmers play very important role not only in maintaining their cattle but also managing their farms, depending upon the situational personal and socio-economic characteristics of the family to which they belong.

MATERIALS AND METHODS

A field survey was conducted to collect information on wide array of training needs of rural dairy farmers of Jammu And Kashmir State. The state comprises of three regions namely Jammu, Kashmir and Ladakh region is located between 32°.17 and 37°.06 North Latitude and 73°.2 and 80°.36 East Longitude in the Himalayan region. Among Jammu region, Jammu district was purposively selected of Jammu and Kashmir as it had maximum milch bovine population and production potentials in dairying. From the selected district, five blocks namely Satwari, Bishnah, R.S. Pura, Arnia and Suchetgarh blocks of Jammu district, based on maximum milch bovine inhabitants and production potentials in dairying were drawn up for inclusion in the present study .

From each selected block, five outstanding milch bovine population villages were selected purposively and from each village, six farmers selected randomly making a total of 150 farmer respondents were covered under the study. Data collection from randomly selected respondents was made by using pre-tested 'structured schedule' through personal interview method. For this purpose, an interview schedule was constructed for data collection from respondents in the light of the objectives of the study. The selected respondents were personally interviewed at their place of residence/ field by the investigators and their responses were recorded in the schedule. Utmost care was taken to make the respondents to understand about the objectives of the study and clarified their doubts in the interview schedule.

For a comprehensive view, the training needs of dairy growers were categorized into seven broad categories for the study *viz*, milk quality and hygiene practices, animal health management, animal nutrition, animal welfare management, breeding and general management, housing and environment management, marketing and financial management. Under each major component, specific and relevant training need practices were collected through different review of literature, discussion with state extension functionaries, progressive dairy farmers as well as investigators own field experiences and were systematically incorporated in the interview schedule. The schedules were administered to the indented respondents for data collection. In this regard, the dairy farmers were requested to give a tick in one of the three response categories (*viz.* Most Needed, Needed and Least Needed) provided against the identified specific items under each major component based on their perceived needs for providing training to them for further improvement in their dairying system and livelihood. Each major training needs comprises of six to seven sub heads, thus operations making total of thirty seven training needs practices in dairy farming.

Data Analysis

The farmer's responses were collected in a 3– point continuum scale as Most Needed, Needed and Least needed by assigning scores 3, 2 and 1 respectively.

Option (Response category) Score

Most Needed (MN) 3

Needed (N) 2

Least needed (LN) 1

Weighted Score (WS) = (No. of MN × 3) + (No. of N × 2) + (No. of LN × 1)

Total No. of MN + N + LN

The Training Need Index (TNI) was computed with the help of following formula (Patil and Kokate, 2011).

$$TNI = \frac{\text{Total obtained score}}{\text{Maximum obtainable score}} \times 100$$

The data were collected through personally interviewing the respondents with the help of a pre-tested structured interview schedule with respect of the objectives of the study. The collected data were scored, tabulated and analyzed by using frequency, percentage, weighted mean and ranking.

RESULTS AND DISCUSSION

Good quality milk is essential for production of good quality dairy products, taste and flavor, free from pathogens and long keeping quality. The data in table 1 depicted the training needs in milk quality and hygiene practices of dairy farmers comprised of six sub components majority of the respondents preferred training on quality control and milk test (TNI= 86.44) followed by value addition of milk (TNI=82.44), animals and equipment hygiene (TNI=76.00), handling the milk (TNI=72.66), practical aspects of milking (TNI= 63.55) and frequency of milking (TNI= 36.88), respectively. Milk tests provide valuable feedback to raw milk suppliers, and encourage them to improve their milking, thus improve the efficiency, quality and profitability of your own operations. A milk handler will assured of the quality of raw milk if certain basic quality tests are carried out from milking stages to the ultimate consumer. Quality control ensures that milk meet accepted standards for chemical composition and purity as well as levels of different micro-organisms. Herd lactation yields, milking efficiency will increase as the frequency of milking is increased might be the reason of low needed training aspects. The findings of present study are in agreement with the findings of Connor *et al.* (2015).

The health management ensures the optimal care and well-being of dairy cattle and to reduce losses in productivity caused by disease and management errors. The chronological training needs felt by the dairy farmer in adoption of improved dairy practices presented in the Table 2. Among several training needs, as regard to health management, the majority of the respondents were of the opinion that identification of common diseases milking (TNI= 97.33), was the major training area followed by management and control of diseases (TNI= 94.22), vaccination schedule (TNI=89.33), identification of common parasites (TNI= 83.33), control of common parasites (TNI=70.22) and isolation of sick animals (TNI=59.33), respectively. The increased response in identification of common diseases of milking animals category of health management may

Table 1: Training needs in milk quality and hygiene practices n = 150

Sl. No.	Dairy practices	Weighted Score (WS)	Mean Score (MS)	Training Need Index (TNI)	Rank
1	Practical aspects of milking	286	1.90	63.55	V
2	Handling the milk	327	2.18	72.66	IV
3	Frequency of milking	166	1.10	36.88	VI
4	Quality control and milk test	389	2.59	86.44	I
5	Animals and equipment hygiene	342	2.28	76.00	III
6	Value addition of milk	371	2.47	82.44	II

Table 2: Training needs in animal health management n = 150

Sl. No.	Dairy practices	Weighted Score (WS)	Mean Score (MS)	Training Need Index (TNI)	Rank
1	Identification of common diseases	438	2.92	97.33	I
2	Management and control of diseases	424	2.82	94.22	II
3	Identification of common parasites	375	2.50	83.33	IV
4	Control of Common parasites	316	2.10	70.22	V
5	Vaccination schedule	402	2.68	89.33	III
6	Isolation of infected animals	267	1.78	59.33	VII
7	Deworming	286	1.90	63.55	VI

be due to the fact that majority of farmers were belongs to border belts have inadequate knowledge about technical aspects of diseases such as etiology, symptoms, diagnosis, lacks trained professionals and quality health management infrastructure adjoining their native places. Timely diagnose of diseases and their treatment results in reduction of economic losses make the farmers think more about disease prevention and control. Respondents observed isolation of infected animals through experience can serve as an ongoing source for many diseases lead to be least training needs aspects among health management. The results are in par with the findings of Das and Mishra (2002) and Gupta and Tripathi (2002).

Efficient milk production in dairy animals requires efficient feed management. Adequate feeding will ensure that animal attains desired body weight, produce more milk and remains healthy. As feeding alone accounts for around 70% of the expenses incurred for dairying it further augment its importance. Table 3 revealed that feeding of livestock during pregnancy (TNI= 81.55), were the most needed training areas followed by nutritional requirements of dairy animals (TNI= 79.11),

preparation of hay, silages and roughages (TNI= 73.11), feeding of colostrums to calf (TNI= 70.00), use of farm residue in cattle feed (TNI= 64.00) and sowing and cutting of green fodder (TNI= 23.11) respectively. Sound feeding management at key stages in the reproductive process provides an acceptable and effective way to improve reproductive outcome, not only in terms of the number of offspring born, but also in terms of their physiological well-being and viability. With increasing concern worldwide focused on climate change and food security it is crucial that sound nutritional programs can result in more efficient, productive, and healthier dairy cows that improve profitability for their owners. The finding reveals that training regarding sowing and cutting of green fodder is less needed as most of the respondents belongs to agriculture background can easily produce and harvest the sufficient amounts of quality fodder for their livestock. Similar trend have been reported by Patil *et al.* (2009).

Animal welfare is concerned about the condition of animals in their care and ensures healthy and well nourished animals. More recent concerns about animal welfare have focused on the pain

Table 3: Training needs in animal nutrition n = 150

Sl. No.	Dairy practices	Weighted Score (WS)	Mean Score (MS)	Training Need Index (TNI)	Rank
1	Nutritional requirements of dairy animals	356	2.37	79.11	II
2	Sowing and cutting of green fodder	104	0.69	23.11	VI
3	Feeding of livestock during pregnancy	367	2.44	81.55	I
4	Feeding of colostrums to calf	315	2.10	70.00	IV
5	Preparation of hay, silage and roughages	329	2.19	73.11	III
6	Use of farm residue in cattle feed	288	1.92	64.00	V

Table 4: Training needs in animal welfare management n = 150

Sl. No.	Dairy practices	Weighted Score (WS)	Mean Score (MS)	Training Need Index (TNI)	Rank
1	Exercising and Grooming	206	1.37	45.77	VI
2	Care and management of pregnant animals	318	2.12	70.66	II
3	Importance of record keeping	392	2.61	87.11	I
4	Care and management of newly born calves and heifers	278	1.85	61.77	IV
5	Care of the dairy animals at the time of calving and after calving	289	1.92	64.22	III
6	Life skills to manage wounds and fractures	247	1.64	54.88	V

or distress that the animals might experience as a result of widely accepted. Table 4 indicated that importance of recordkeeping (TNI= 87.11) was the most needed training area followed by care and management of pregnant animals (TNI=70.66), care of the dairy animals at the time of calving and after calving (TNI= 64.22), care and management of newly born calves and heifers (TNI= 61.77), life skills to manage wounds and fractures (TNI= 54.88) and exercising and grooming (TNI= 45.77) respectively. The possible reason of highly rated keeping good records might be to make decisions relating to milk production, feeding requirement, growth and body size/ weight change, reproductive management, animal health interventions, culling of low-profit animals and sale of live animals for breeding purposes etc. Exercise and grooming in dairy animals enhances the health and productivity of the animals without involving economic involvement might be the reason of least training dairy practices. These results are in accordance with the findings of Rajput *et al.* (2012).

The consequences of selection and breeding can be judged on the basis of its impacts on health and the welfare of individual offspring and future generations. The data on this parameter indicates that insemination and its role (TNI= 88.22) was indicated as the most important need followed by knowledge of dairy breeds (TNI= 84.00) breeding performance (TNI= 83.11), castration, identification, dehorning, steaming up and weaning calf etc. (TNI= 72.88), and methods of heat detection (TNI= 66.00) respectively. It could be inferred from Table 5 that insemination and its role might determines proven and better genetically quality livestock becomes readily available across their places. A further education of farmers regarding this would result in more animals being inseminated at an optimal time and a higher pregnancy result. The results in the table 5 depicts that majority of respondents easily identifies cow behaviour and other observable symptoms like clear mucous discharge, mounting other cows etc. are critical symptoms of heat detection might be the reason for least training practices. These findings are accordance with the findings of Sah *et al.* (2002).

A well designed house will give opportunity to the dairy growers for the future development, easy to clean, reduces feed cost and easier manure handling and or by-products. The results in the Table 6 depicts

Table 5: Training needs in breeding and general management n = 150

Sl. No.	Dairy practices	Weighted Score (WS)	Mean Score (MS)	Training Need Index (TNI)	Rank
1	Knowledge of dairy breeds	378	2.52	84.00	II
2	Breeding performance	374	2.49	83.11	III
3	Indicators of infertility	321	2.14	71.33	V
4	Methods of heat detection	297	1.98	66.00	VI
5	Insemination and its role	397	2.52	88.22	I
6	Castration, Identification, Dehorning, Steaming up and Weaning calf etc.	328	2.18	72.88	IV

Table 6: Training needs in housing and environment management n = 150

Sl. No.	Dairy practices	Weighted Score (WS)	Mean Score (MS)	Training Need Index (TNI)	Rank
1	Construction of shed	189	1.26	42.00	VI
2	Housing layout and design	297	1.98	66.00	II
3	Use of farm inputs efficiently and sustainably	249	1.66	55.33	IV
4	Use of agricultural and veterinary chemicals to make hygiene environment	317	2.11	70.44	I
5	Site and method of carcasses disposal	278	1.84	61.78	III
6	Disposing of animal waste	217	1.45	48.22	V

that use of agricultural and veterinary chemicals to make hygiene environment (TNI= 70.44) was the most needed training area followed by housing layout and design (TNI= 66.00), site and method of carcasses disposal (TNI= 61.78), use of farm inputs efficiently and sustainably (TNI= 55.33), disposing of animal waste (TNI= 48.22) and construction of shed (TNI= 42.00) respectively. Improper use of chemicals may results in accidental poisoning, pollution, chemical residues, damage to native flora, fauna or beneficial insects, and possibly chemical resistance in the pest or disease. The respondents preferred this training aspects being aware of community concerns regarding chemical use including health, environment. Construction of shed was least needed training practice by the respondents may be due to either high cost construction on scientific shed or using farm residue as a cheap source for making farm shed. Proper housing of cattle protected from extreme climatic condition such as direct sunshine, cold etc. will hamper the health and productivity of dairy animals. These Findings are in conformity to the observations found by Patil *et al.* (2009).

Marketing and financial management involves dairy farmers to improve their business management skills, management productivity, increase profitability, and fulfill their long-term goals. Table 7 indicated

that govt. incentives in dairy development and institutional credit for dairy development (TNI = 86.88) were the most needed training area might due to Government has launched a host of schemes to promote of modern dairy farms for production of clean milk, bring structural changes in the unorganized sector and generate self employment followed by formation and managements of SHGs group (TNI = 81.77), financial viability of an enterprise (TNI = 77.11), dairy entrepreneurship skills (TNI = 68.88) selling and marketing of milk and livestock (TNI = 63.77) respectively. Perhaps information about such schemes does not reach farmers at mass level. The probable reason for this trend may be eagerness and fanaticism to become cost effectively. Marketing information from the localite sources and membership of dairy related organizations enable the dairy farmers to know marketing strategies to sell their products at a reasonable price in the market might be the reason for low training aspects. Similar results have been reported by Durgga and Subhadra (2009).

Dairying is one of the important enterprises, which supports the rural households by providing gainful employment and steady income, thus they should be given training on various areas of dairy enterprise. With respect to overall preference of

Table 7: Training needs in marketing and financial management n = 150

Sl. No.	Dairy practices	Weighted Score (WS)	Mean Score (MS)	Training Need Index (TNI)	Rank
1	Selling and marketing of milk and livestock	287	1.91	63.77	V
2	Formation and management of SHGs	368	2.45	81.77	II
3	Dairy Entrepreneurship skills	310	2.06	68.88	IV
4	Financial viability of an enterprise	347	2.31	77.11	III
5	Govt. incentives in dairy development	391	2.60	86.88	I
6	Institutional credit for dairy development	391	2.60	86.88	I

Table 8: Overall training needs of dairy practices n = 150

Sl. No.	Dairy practices	Mean Score (MS)	Rank
1	Training needs in milking hygiene practices	2.08	IV
2	Training needs in animal health	2.38	I
3	Training needs in animal nutrition	1.95	V
4	Training needs in animal welfare management	1.91	VI
5	Training needs in breeding and general management	2.30	III
6	Training needs in housing and environment management	1.71	VII
7	Training needs in marketing and financial management	2.32	II

training needs of dairy practices in Table 8 reveals that among the seven areas of dairy practices, the respondents assigned first rank to training needs in animal health followed by breeding and general management, marketing and financial management, animal nutrition, milking hygiene practices, animal welfare management, animal nutrition and housing and environment management respectively. The similar results were also reported by Patil *et al.* (2009) and therefore, there is a need for conducting more number of need based knowledge and skill oriented trainings among dairy farmers to improve the existing status of dairy practices.

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CONCLUSION

On the basis of the results of the study the following conclusions are drawn. The results revealed that even in the most popular areas of training, there was an inadequacy in terms of frequency of training imparted by dairying extension agencies. Therefore, in order to accelerate the success of this area, there is a need for conducting more number of needs based and well tailored training programme suited to dairy farmer which would in turn help them to have more extension contacts. The most important finding is that dairying extension agencies are not giving more importance for TNI. Therefore, the researchers proposed urgently adjustment of TNI that are followed by extension agencies in their training schedule that will bring a positive change in the dairying sector. The results of the study will help the extension agencies to develop suitable training programmes for the dairy farmers in improved dairy farming practices to improve their milk production and make the dairying a successful enterprise.

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