Constraints Perceived by Dairy Farmers in Access and Management of Good Dairy Farming Practices

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A B S T R A C T

The present study was conducted in two agro-climatic zones; Central plain zone (CPZ) and Western plain zone (WPZ) of Punjab having maximum number of dairy animals according to 20th livestock census. The data were collected by using well structured interview schedule from 300 dairy farmers of CPZ and WPZ. Garrett's ranking technique was used to prioritize the different sets of constraints in terms of their mean score. The study revealed that "lack of training institute in the research locale (63.60)", lack of knowledge about schemes of A.H department (59.64) and "absence of milk testing facilities in study area (57.00)" were the major infrastructural constraints in terms of severity. Under technical constraints, "lack of knowledge about value addition of milk and milk by-products (63.97)", "lack of knowledge about scientific housing practices (57.82)" and "lack of regular technical guidance facilities from experts (57.49)" were the major constraints. "Lack of credit facilities (62.21)", "high cost land (57.90)" and "high cost of feed and fodder (53.50)" were the severe economic constraints as perceived by dairy farmers. Under marketing constraints "difficulty in marketing of milk and milk products (60.03)", "lack of knowledge about marketing strategies (57.94)" and "distress sale due to perishable nature of milk and milk products (54.90)" were major constraints in terms of their severity. "Lack of know about various mobile applications related to scientific dairy farm practices (62.84)", "very few information of livestock management in daily newspaper/daily samachar (59.67)"; "ambulatory service facility is not available in the area (56.52)" and "not getting the real information about scheme/programs at field level" (53.70) were major communicational constraints as perceived by dairy farmers. Hence, there is a need to remove these constraints on priority basis so that farmers can run their dairy enterprise in a smooth and better ways.

Introduction

Dairying and agriculture are bound together by a set of reciprocal input-output relations and among all the livestock ventures dairying is the most prehistoric occupation established in the rural setting of our country. Dairy sector contributes significantly in spawning employment opportunities and supplementing the income of small and marginal farmers. In recent years, the dairy sector has emerged as a most significant source of rural employment

and income in the country. Dairy development has important role not only in generating employment and augmenting livelihood opportunities of rural people but also improving the nutritional security of the people.

India has largest livestock population in the world i.e., 535.78 million which constitute 192.49 million cattle, 109.85 million buffalos whereas total livestock population of Punjab is69.92 lac, out of which cattle population is 25.31 lacs and Buffaloes population is 40.15 lacs (Livestock Census 2020). India ranks first in milk production with a production level of 187.70 million tones milk during the year 2018-19 (Anonymous, 2019). The average milk yield in Punjab increased by 50.14 per cent between years 2012 and 2019. The state now has the highest per capita milk availability in the country at 1,181 gram per day against the national average of 374 gram (Livestock Census, 2020).

In spite of the remarkable growth in milk production during the past few decades, productivity of dairy animals continues to remain very low and dairy farmers face various infrastructural, technical, economic, marketing and communicational constraints which are a major concern hindering further development of dairy industry. Proper identification of major constraints faced by dairy farmers the production & productivity of dairy animal can be enhanced in a sustainable manner. Hence, the present study was carried out with an objective to explore various constraints perceived by dairy farmers in access & management of good dairy farming practices (GDFPs).

Materials and Methods

Selection and description of study area

The present study was conducted in two agro-climatic zones; Central plain zone (CPZ) and Western plain zone (WPZ) of Punjab. From CPZ; Ludhiana and Sangrur district and from WPZ; Tarn Taran and Ferozepur were selected purposively based on the maximum number of dairy animals, well developed infrastructure for dairy development and availability of potential dairy farmers in the respective zone. From each district 3 blocks were selected and out of 4 selected districts total 12 blocks were identified randomly and from each block cluster of 4 villages were selected. Potential dairy farmers in these village clusters were identified with help of veterinary officer's, extension officers and key informants & representative sample of 25 farmers was randomly selected from four villages in each block giving a total sample size of 300 respondents for the study.

To analyze various constraints faced by dairy farmers, a structured interview schedule was developed under sub-heads namely; infrastructural, technical, economic marketing and communicational constraints. The data were collected by face to face interview using pre-tested structured schedule. Garrett's ranking technique was used to prioritize the different sets of constraints in terms of their mean score.

According to Garrett's ranking technique, the respondents were asked to enumerate and assign ranks to different constraints, which were used for prioritization of constrains. Order of merit as given by the respondents was converted into rank, by using the following formula:

$$\text{Percent position} = \frac{100\ (R_{ij} - 0.50)}{(N_j)}$$

Where, Rij = Rank given for ith problems by jth individual.

Nj = number of problems ranked by the jth individual.

The percent position of each rank was then converted into scores, by referring to the table, as given by Garrett. The scores of individual respondents for a particular problem were added and divided by the total number of respondents. The mean scores for all the constraints were arranged in descending order and thus, rank were assigned to prioritize the constraints.

Results and Discussion

A study of this nature would be incomplete, if the constraints were not identified. The literary meaning of "constraints" is the quality or state of being checked, restricted or compelled to avoid or perform some action. According to this study we can also define constraints as all those factors, which hinder the process of adoption and effective implementation of the good dairy farming practices (GDFPs) as perceived by the dairy farmers. The important constraints as faced by the respondents were ranked and discussed under the categories of infrastructural, technical, economic, marketing and communicational constraints. These constraints were analyzed and ranked with the help of Garret's ranking technique.

Infrastructural constraints

The data presented in Table 1 and Fig. 1, revealed that under infrastructural constraints "lack of training institute in research locale" (mean score: 63.60), "lack of knowledge about schemes of A.H department" (mean score: 59.64) and "absence of milk testing facilities in study area" (mean score: 57.00) were perceived as more severe and ranked 1st, 2nd and 3rd.

These results were in line with findings of Seth *et al.,* (2004) and Jeenger (2010) who reported that majority of the respondents had not taken training in dairy farming. It may be

due to fact that lack of training organizations in the study area or located in urban area and semi urban area.

The other constraints such as "non-availability of advanced dairy equipment's in the research locale " (Mean score: 56.40), "cost of veterinary medicine is very high" (Mean score: 55.31), "cost of veterinary medicine is very high (Mean score: 55.31), "lack of storage and preservation facility of milk and milk by-products" (Mean score: 49.43), "lack of space for modern dairy farm" (Mean score: 49.02), "facilities of veterinary services" (Mean score: 44.65) and "lack of water resources at farm for routine farm operations" (Mean score: 42.20) were ranked 4th, 5th, 6th, 7th, 8th and 9th, respectively. These findings are in line with the findings of Nachimuthu (2002).

From the above findings it can be concluded that lack of training institute in the research locale, lack of knowledge about schemes of A.H department and absence of milk testing facilities in study area were highlighted a major constraints. Therefore there is a need to provide the basic infrastructural facilities such as; availability of training institute, dairy equipment's facilities, milk testing facilities, milk storage and preservation facilities, disease diagnostic facilities to the dairy farmers in their area so that they can run their dairy enterprise in a smooth and better ways.

Technical constraints

The results presented in the table 2 and Fig. 2, revealed that, "lack of knowledge about value addition of milk and milk by-products" (mean score: 63.97)" was perceived as most important constraint and ranked first. "Lack of knowledge about scientific housing practices" (mean score: 57.82); and "lack of regular technical guidance facilities from experts" (mean score: 57.49); were ranked

second and third most important constraints faced by dairy farmers.

The other constraints includes, "lack knowledge about clean milk production" (mean score: 55.82); "lack of knowledge about feeding of balanced ration to the animals" (mean score: 53.61), "lack knowledge about deworming and vaccination schedule" (mean score: 50.64), "unavailability of Artificial Insemination (A.I) centres in the study area" (mean score: 50.64), and "lack of technical 'know how' about management of dairy units" (mean score: 50.64), were ranked as 4th, 5th, 6th, 7th and 8th respectively, on the basis of their mean

score among the various technical constraints. These constraints may be attributed because lack of proper technical guidance well in time, low mass media exposure and low extension contact by the respondents, which is in agreement with the findings of Singh *et al.,* (2004) and Tiwari *et al.,* (2003).

These constraints may be sorted out by organizing animal welfare camps, awareness camps, regular technical guidance about scientific breeding, feeding, healthcare and management practices through telephone helpline, radio, T.V. and various other social media tools.

Table.1 Infrastructural constraints

Sr. No.	Infrastructural constraints	Mean score	Rank
1	Non availability of advanced dairy equipment's in the research locale	56.40	IV
2.	Lack of space for modern dairy farm	49.02	VII
3.	Facility of veterinary services	44.65	VIII
4	Lack of training institute in the research locale	63.60	I
5	Cost of veterinary medicine is very high	55.31	V
6	Absence of milk testing facilities in study area	57.00	III
7	Lack of water resources at farm for routine operations	42.20	IX
8	Lack of storage and preservation facility of milk and milk by-products	49.43	VI
9	Lack of knowledge about schemes of A.H department	59.64	II

Table.2 Technical constraints

Sr. No.	Technical Constraints	Mean score	Rank
1	Lack of technical 'know how' about management of dairy units	45.62	VIII
2	Lack of regular technical guidance facilities from experts	57.49	III
3	Lack of knowledge about feeding of balanced ration to the animals	53.61	V
4	Lack of knowledge about scientific housing practices	57.82	II
5	Lack knowledge about clean milk production	55.82	IV
6	Lack knowledge about deworming and vaccination schedule	50.64	VI
7	Lack of knowledge about value addition of milk and milk by-products	63.97	I
8	Unavailability of Artificial Insemination (A.I) centres in the study area	47.00	VII

Table.3 Economic constraints

Sr. No.	Economic Constraints	Mean score	Rank
1	Lack of credit facilities	62.21	I
2	High cost land	57.90	II
3	High cost of feed and fodder	53.50	III
4	High cost elite breeds for dairy animals	52.30	IV
5	Low economic gain from dairy enterprise	50.70	VI
6	High cost of transportation	48.50	VII
7	Limited subsidies by government for starting of dairy enterprise	50.93	V

Table.4 Marketing constraints perceived by dairy farmers

Sr. No.	Marketing Constraints	Mean score	Rank
1	Difficulty in marketing of milk and milk products	60.03	I
2	Lack of knowledge about marketing strategies	57.94	II
3	Less knowledge about marketing channel of milk and milk products	52.86	IV
4	Interferences of middle man in supply chain management	51.05	V
5	Distress sale due to perishable nature of milk and milk products	54.90	III

Table.5 Communicational constraints

Sr. No.	Communicational Constraints	Mean score	Rank
1	Poor market information system	48.52	VI
2	Non-cooperative nature of progressive dairy farmers	44.34	VII
3	Difficulty in approach to veterinary services	42.94	VIII
4	Not getting the real time information about government scheme/programs at field level.	53.70	IV
5	Ambulatory service facility is not available in the area	56.52	III
6	Unavailability of livestock related literature	51.95	V
7	Very few information of livestock management daily newspaper/daily samachar	59.67	II
8	Lack of knowledge about various mobile applications related to scientific dairy farming practices	62.84	I
9	Internet network problem in the study area	35.44	IX

Fig.1 Infrastructural constraints faced by dairy farmers
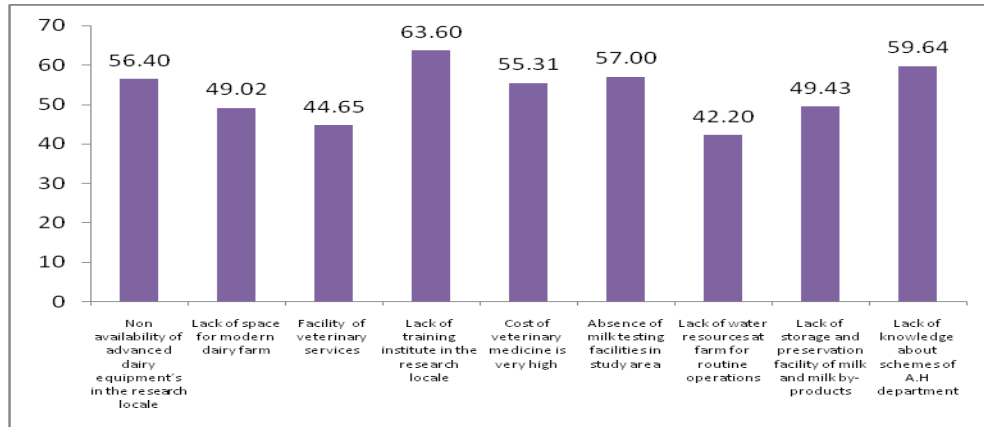

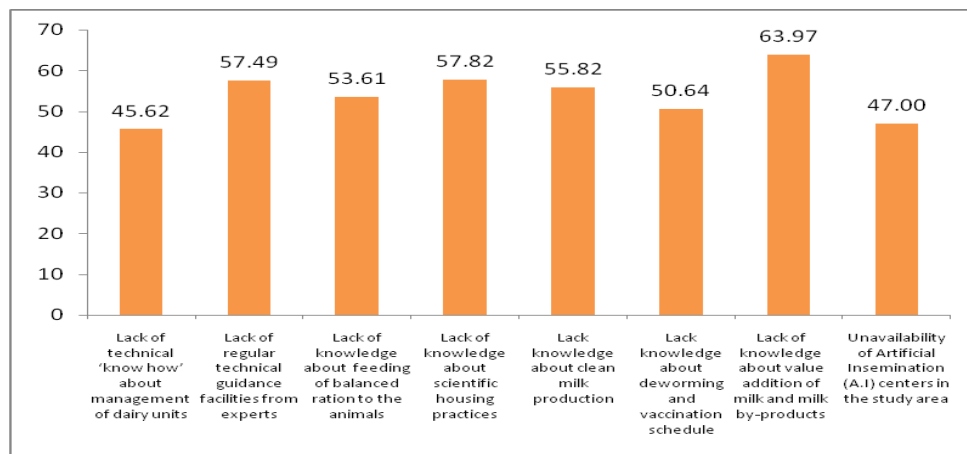**Fig.2** Technical constraints perceived by dairy farmers

Fig.3 Economic constraints perceived by dairy farmers
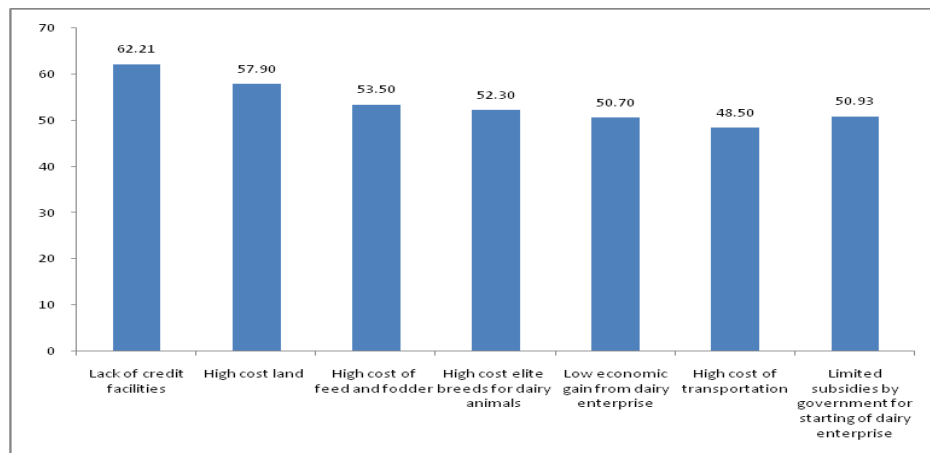
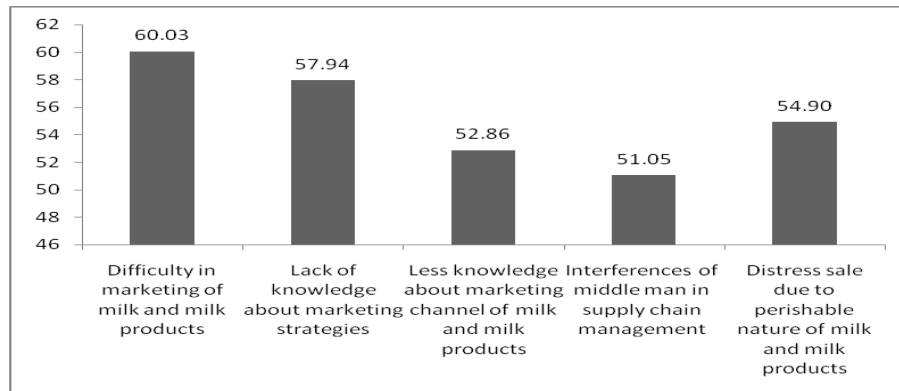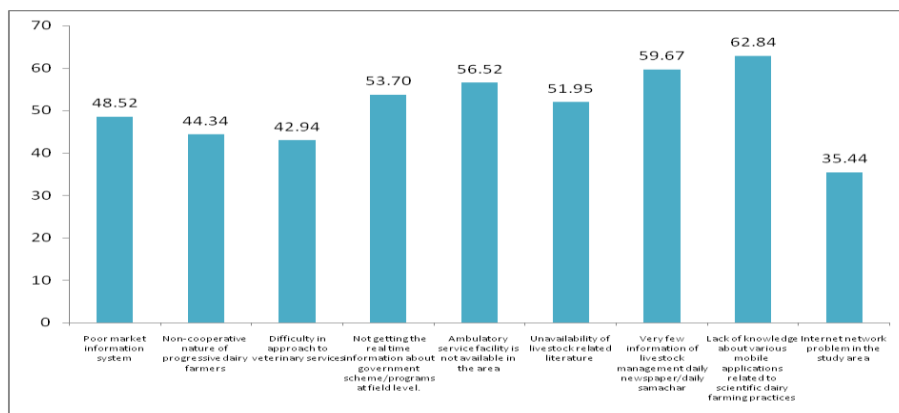**Fig.4** Marketing constraints perceived by dairy farmers

Fig.5 Communication constraints perceived by dairy farmers

Economic constraints

The data presented in table 3, Fig. 3 revealed that under economic constraints "lack of credit facilities" (mean score: 62.21) was perceived as most severe constraint. Similar result was depicted by Rao *et al., (*2013) and Uday *et al.,* (2013) who reported lack of credit facilities as the major constraints in dairy farming.

The other constraints such as "high cost land" (Mean score: 57.90) and "high cost of feed and fodder" (Mean score: 53.50) were always an issue for farmers when they want to start a dairy enterprise were perceived as 3rd and 4th most important constraints. The other constraints such as "high cost of elite breeds for dairy animals" (Mean score: 52.30),

"limited subsidies by government for starting of dairy enterprise" (Mean score: 50.93), "low economic gain from dairy enterprise" (mean score: 50.70) and "high cost of transportation" (mean score: 48.50) were ranked 4th, 5th, 6th and 7th respectively on the basis of their severity on the basis of their mean score. These findings are in line with Sarker and Ghosh (2010) and Minhaj *et al.,* (2019), who reported that high cost of feed and or mineral mixture was perceived as most serious constraint followed by high cost of fodder and non availability of pasture.

Marketing constraints

Market plays an important role in diffusion and adoption of new technology. From Table 4 and Fig. 4, it is indicated that "difficulty in

marketing of milk and milk products" (mean score: 60.03) was perceived as most serious constraint by the dairy farmers. The possible reasons for difficulty in marketing of milk and milk by-products might be due to high competition from major units and consumer's preference to quality milk, similar result was in line with the findings of Singh *et al.,* (2019*).* Hence it is suggested that there should be improved marketing system, so that milk producers will not face difficulty in marketing of milk and milk products.

The other constraints were "lack of knowledge about marketing strategies" (mean score: 57.94); was found to be second most serious constraints "Distress sale due to perishable nature of milk and milk products (mean score: 54.9) has been found to be the second and third most serious constraints followed by "less knowledge about marketing channel of milk and milk products" (mean score: 52.86) and "interferences of middle man in supply chain management" (mean score: 51.05) were ranked 4th and 5th constraints, respectively on the basis of their mean score.

Communicational constraints

The data presented in table 5, Fig. 5 indicated that among communicational constraints "lack of know about various mobile applications related to scientific dairy farm practices" (mean score: 62.84) was the most serious constraint faced by the dairy farmers.

The other constraints were "very few information of livestock management in daily newspaper/daily samachar" (mean score: 59.67); "ambulatory service facility is not available in the area" (mean score: 56.52); "Not getting the real information about scheme/programs at field level" (mean score: 53.70); "unavailability of livestock related magazine" (mean score: 51.95), poor market

information system (mean score: 48.52), non-cooperative nature of progressive dairy farmers (mean score: 44.34), difficulty in approach to veterinary services (mean score: 42.94) and internet network problem in the study area (mean score: 35.44) were faced as second, third, fourth, fifth, sixth, seventh, eighth and ninth important constraints, respectively by the dairy farmers.

It could be concluded from the above study that for sustainability of dairy farming enterprise there is a need to establish proper training institutes in the rural areas for capacity building and refreshing their knowledge base of dairy farmers on regular basis and need to provide basic input facilities, disease diagnostic facilities and milk storage and preservation facilities to the dairy farmers in their locale so that they can run their dairy enterprise in a smooth and better way. There is a dire need of improved marketing system so that milk producers will not face difficulty in marketing of milk and milk products. In nutshell, constraints should be minimized immediately for the betterment and improving the socio-economic status of dairy farmers.

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