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Socio-economic Profile and Constraints faced by Dairy Farmers of Udham Singh Nagar District of Uttarakhand, India

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ABSTRACT: Dairy farming plays a very crucial role in improving the socio-economic status of the rural farmers in our country. A study was conducted to explore the socio-economic profile and constraints faced by dairy farmers of Udham Singh Nagar district. Random sampling method was applied for the study and data were collected using an interview schedule. For the present study a total of 250 respondents of 25 villages were selected. The findings of the study showed that mostly, the head of families were middle aged (45.20 %) and 48.00 % of them were educated up to high school and above. Their major occupation (72.80 %) was animal husbandry and agriculture and 48.80 % of the farmers had large landholding's (> 5 acres). Total 42.00 % of the farmers had a large herd size of more than 6 animals with cross-bred cattle, 42.00 per cent farmers had medium (4-6 lakhs) annual income. More than half (54.40 %) of the respondents were having experience of 5-10 years for medium farming, most of the respondents (71.60%) lived in joint family, source of information on dairy farming was through artificial insemination (A.I.) workers (82.80%) and care of animals was mostly by family members (85.20%). Majority of the farmers used to face the problem of distant location of veterinary hospital (71.20%), problem of emergency veterinary services was 59.20 per cent. The high cost for vaccination, deworming, insect control and disposal of dead animals were the main constraints faced by the dairy farmers. All the factors have significant impact on the economy of dairy farmers. The main objective of this paper is to highlight the major impediments of dairy farmers in production of milk and milk products and its impact on socio-economic status of farmers. The findings may be helpful for taking appropriate measures during formulating policies to reduce the constraints and improve the farmer's socio-economic status.

Keywords: Dairy farmer, Socio-economic profile, constraints faced, animal husbandry.

INTRODUCTION

Uttarakhand, formerly Uttaranchal, 27th State of India also called Devbhumi (Land of the Gods) is located in the north western part of the country. Uttarakhand is having three main regions such as Himalayas, the Bhabar and the Terai regions. Major peaks are located in north western zone (Mathur, 2018). The practice of animal husbandry next to agriculture is done by most of the farmers. Dairy cattle are mostly populated in the southern part of Uttarakhand. Vast forest (59.7%), grazing land (3.4%) and sufficient clean water are the major driving factors for dairy farming in this region (Sati, 2016). Animal husbandry along with Agriculture is the backbone of rural economy of this State. Under Animal husbandry, dairy farming is very charming and earning business for the farmers of the district. This sector provides nutrient rich food products, draught power, dung as organic manure, domestic fuel, hides and skin. It is also a regular source of income for rural households (Chinnadurai *et al.*, 2018). Livestock farming provides not only earning but also generate self-employment and a nutritious diet to the society in rural as well as urban areas. Cattle farming in Udham Singh Nagar (U.S. Nagar) is constituted mainly from small farm holders. They managed the farm in a traditional way. The effect of several scientific techniques (breeds, artificial insemination, deworming, vaccination, etc) and socio-demographic factors would be beneficial to improve the dairy production. Many socio-economic studies revealed that the parameters viz. education, land holding and occupation are playing significant role in development of animal husbandry. Constraints refer to the problems which are faced by farmers in successful operation and management of dairy activity. Constraints could be physical or they could be policies which may hinder the effective and

efficient management of a dairy and livestock activities (Kumari *et al.,* 2015). The constraints faced by the dairy farmers have direct impact on production of animals and their products which will reflect on the economic status of farmers. If these constraints are identified, they are helpful to bridge the gap between dairy technology and its adoption by dairy farmers (Rathod *et al.,* 2014). This paper depicts the socio-economic profile of the dairy farmers and the constraints experienced by them during dairy farming in the U.S. Nagar district of Uttarakhand.

MATERIALS AND METHODS

A. Location of study

During the study, survey was conducted in 25 villages in Udham Singh Nagar district of Uttarakhand state, India. The study area, U.S. Nagar is located at 269 km South-East side from Dehradun capital of Uttarakhand. The area lies between a latitude of 28.98°N and longitude of 79.40°E and has an elevation of 158meter above sea level. The area is characterized by a sub-tropical and sub humid climate of heavy annual average rainfall of 1296.85 mm per year. The area has a relatively higher temperature of about 38.8°C (101.8°F) and having a minimum temperature of 7.1°C (44.8°F).

B. Period of study

Study of socio-economic status and dairy husbandry practices adopted by farmers in different clusters of Udham Singh Nagar district was done from December 2020 to June 2021.

C. Method of selection

(a) Selection of village. A total of 25 villages were selected and they were divided into five clusters *i.e.*, five villages from each cluster *i.e.*, Bara, Bajpur, Gadarpur, Sitarganj and Pantnagar were randomly selected.

(b) Selection of respondents. For the present study, a total of 250 respondents (50 from each cluster) were selected by random sampling method (RSM). The variables of the socio-economic study included age, education, occupation, land holding of farmers, type of family (joint/nuclear), annual income, herd size, experience, sources of information and animal care. Constraints encountered by the farmers such as distant location of veterinary hospital, problem of emergency veterinary services, high cost of deworming and vaccination, insect control and disposal of dead animals were studied.

D. Statistical methods used

Collected data were analysed by using simple statistical tools such as frequencies, percentages and chi square test. were used to observe the effect of constraints on different management practices (Snedecor and Cochran, 1994). Interview schedule was the basic instrument for the study. The questions were related to different socio-economic measures and impediments faced by the farmers while doing animal husbandry practice.

RESULTS AND DISCUSSION

All the variable parameters of socio-economic profile are summarized in table form

Table 1: Socio-economic parameters of dairy farmers.

Sr. No.	Parameters		Frequency N=250	Percentage (%)
1.	Age of family head	Young (up to 30 years)	(74)	29.60
		Middle (31- 50 years)	(113)	45.20
		Old (> 50 years)	(63)	25.20
2.	Education	Illiterate	(34)	13.60
		Primary & Middle	(96)	38.40
		High School & above	(120)	48.00
3.	Occupation	Service & Business	(68)	27.20
		Agri +A.H	(182)	72.80
4.	Landholding	Landless	(40)	16.00
		Small (up to 5 acres)	(88)	35.20
		Large (>5 acres)	(122)	48.80
5.	Herd Size	Small (1-3)	(62)	24.20
		Medium (4-6)	(83)	33.20
		Large (>6)	(105)	42.00
6.	Income	Low 1-3 lakh	(74)	29.60
		Medium 4-6 lakhs	(105)	42.00
		High >6 lakhs	(71)	28.40
7.	Experience	Low (up to 5 years)	(50)	20.00
		Medium (5-10 years)	(136)	54.40
		High (>10 years)	(64)	25.60
8.	Family type	Nuclear	(71)	28.40
		Joint	(179)	71.60
9	Source of Information	A.I workers	(207)	82.80
		Training center	(43)	17.20
10	Animal Care	Labour	(37)	14.80
		Family's	(213)	85.20

A. Age

It was observed that about half (45.20 %) of the farmers belonged to the middle (31- 50 years) age group, 29.60 % of the farmers belonged to young (up to 30 years) age, 25.20 percent belonged to old age group (above 50 years). This finding is in line with the findings of Kumar *et al.,* (2020) who reported that higher proportion of farmers were of middle age group as their main occupation was dairy farming where as young persons were involved in other activities also.

B. Education

Education of dairy farmers showed that 13.60 % of the respondents were illiterate, 38.40 % were educated primary and middle level, and 48.00 % up to Higher School and above level. Girish *et al.,* (2020) also reported in the Karnataka regarding dairy farmer's education level and results revealed that 35.00 % respondents had primary level and 19.44 % had middle school level education whereas 42.00 % were illiterate in the study area.

C. Occupation

The main occupation for 72.80% of the farmers was agriculture which included animal husbandry, 27.20 % occupation related from business engaged private and government services. Similar to the present study Mahesh *et al.* (2020) conducted a study on dairy farmers in villages of Saradhana block of Meerut and found that main occupation of 80 per cent of dairy farmers was agriculture, 9.17 % dairying, 5.83 % service and only 5 % had business as the main occupation.

D. Landholding

The land owned also differed with the socio-economic status of the farmers. Total 48.80 per cent of the farmers had above 5 acres (large) land, 35.20 per cent had up to 5 acres of land (small) and 16.00 per cent landless farmers (Table 1). It is very clear from the results that more than two third of the respondents are small and large farmers. The dairy activity taken up by small and large farmers not only provide additional employment but also enhance their family income by effective utilization of their family labour and other land resources.

Herd Size The majority of respondents (42 per cent) belonged to large herd size reared more than 6 animals and 33.20 per cent were rearing medium herd (4- 6 animals) whereas 24.20 per cent farmers reared 1 to 3 animals *i.e.*, small herd size. The medium and large herd size maintained by maximum farmers is indicative of the fact that dairying is an important component of households' income-generating activities. Similar results were found by Karthikeyan *et al*. (2018).

Income. The annual income of farmers was as follows i.e., 42.00 per cent earned about medium income 4-6 lakhs, 29.60 per cent earned small income of 1-3 lakhs and 28.40 per cent earned large income of >10 lakhs. This finding is in accordance with Divekar & Trivedi (2020).

Experience. Majority of the respondents (54.40 per cent) had medium level i.e., 5-10 years of experience in dairying, and 25.60 per cent large level having more than 10-year experience in dairy farming. Only 20 per cent small level (less than 5-year experience) of dairy farming this could be because dairying is an age long practice, which is being carried out by the respondents and their fore fathers.

Family Type. From the data, it is clear that 71.60 % of the families were joint families and 28.40 % were nuclear families. It may be concluded that the nuclear family is not common in selected villages. The probable reason behind this could be the fact that some of the respondents migrated from their villages after separating from the joint family and eventually settled in the urban areas.

Source of Information. The results in Table 1 showed that 82.80 % of dairy farmers indicated A.I workers as their source of information, 17.20 % of dairy farmer's mentioned training centres as their source of information. Similar findings were also reported by Adhikari *et al.* (2020) as well as Singh and Farhan (2021).

Animal Care. The animal care was mainly done by family members that is about 85.20 per cent and only 14.80 per cent was made by labours because family members are more aware about animal cares. Similar findings were also reported by Tewari *et al*., (2018).

Table 2: Constraints faced by dairy farmers.

Sr. No.	Practices adopted	Faced /Not faced	Frequency N=250	Percentage (%)
1.	Location of veterinary hospital	Faced	(178)	71.2
		Not faced	(72)	28.8
2.	Emergency veterinary services	Faced	(226)	59.2
		Not faced	(24)	40.8
3.	High cost of vaccination	Faced	(158)	63.2
		Not faced	(92)	36.8
4.	Deworming schedule in animals	Faced	(211)	84.4
		Not faced	(39)	15.6
5.	Common contagious disease	Faced	(137)	57.2
		Not faced	(113)	46.8
6.	Insect control treatment	Faced	(33)	13.2
		Not faced	(217)	86.8
7.	Problems of disposal in dead animals	Faced	(209)	83.6
		Not faced	(41)	16

The data presented in the Table 2 revealed that 28.8 per cent farmers did not face the problems of location of veterinary hospital while 71.2% dairy farmers face the problem of distances of veterinary hospital. 40.8% farmers were not facing the problems of unavailability of emergency veterinary services and 59.2 per cent farmers were facing these problems. Majority of farmers (63.2 per cent) reported the occurrence of problem of high cost of vaccination services and 36.8 per cent did not face the high charges of vaccination

availability. 84.4 per cent farmers faced the problem of regular deworming and only 15.6 per cent farmers did not face these problems. The majority of dairy farmers (57.2%) faced the constraints such as common infectious diseases like Mastitis, Foot and Mouth Disease (FMD), Haemorrhagic Septicaemia (HS) and Black Quarter (BQ). Majority of the farmers 86.8 per cent found not facing the problems of insect's treatment while only 13.2 per cent were found facing these problems. Most of the farmers 83.6 per cent were facing the problems of disposing the dead animals, only 16 per cent farmers not facing problem of disposal of dead animals. The present study helped us to derive the conclusion that majority of the farmers had facing the problems in dairy farming. Farmer should be aware to adopt the scientific farming practices which will lead to better future outcomes.

Table 3: Statistical analysis of independent variables.

Sr. No.	Independent variables	χ2 Value
1.	Location of veterinary hospital	16.11**
2.	Emergency veterinary services	11.71**
3.	High cost of vaccination	2.57^{NS}
4.	Deworming schedule in animals	2.86^{NS}
5.	Common contagious disease	5.8^{NS}
6.	Insect control treatment	5.8^{NS}
7.	Problems of disposal in dead animals	5^{NS}

NS - Non-Significant; ** Significant at 1% level of probability

The association between distant location of veterinary hospital from farmer's house and cluster were highly significant. The association between unavailability of emergency veterinary services and cluster was highly significant. Present findings got substantial support from the findings of Mande and Thombre (2009)**.** There were non-significant association between high cost of vaccination and cluster, between lack of awareness about deworming schedule, between common contagious disease and their prevention measures. Present findings got support from the findings of Selvaraj *et al.,* (2003); Shafiq *et al.* (2017). Non-significant association were also found between insect control treatment and between problems of disposal in dead animals and cluster. Present findings are almost similar to the findings of Kumar, (2015).

CONCLUSION

In conclusion, present study highlighted the socio-economic profile of dairy farmers and various constraints faced by them. This study also highlighted the major constraints like the location of veterinary hospital, emergency veterinary services, high cost of vaccination, deworming schedule in animals, common contagious diseases, insect control and their treatment, problems of dead animals disposal and their statistical relationship among all clusters. To minimise the problems, different social and extension activities on dairy farming should be carried out in a way to enhance the knowledge of farmers on the recent technical interventions on scientific dairy management. This will help to convert dairy farming into a profitable dairy enterprise. These findings might be helpful in formulating policies and implementing programmes for the development of dairy entrepreneurship.

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Conflict of Interest. None.

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