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Scenario of Dairy Animals Kept by Different Categories of Farmers in Punjab

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ABSTRACT

Punjab Agricultural University is regularly organizing *kisan* mela since 1967 and a large number of farmers visits these melas in order to acquaint themselves with the recent technologies developed by the university. Further, in order to disseminate latest technologies amongst farming community, it is essential to assess the training needs and availability of existing resources with the farmers. The present study was thus conducted to assess the status of dairy animals kept by those farmers who visited *kisan* mela during September,2022 in order to plan various extension activities to be undertaken in near future for the benefit of dairy farmers in the state of Punjab. The study was conducted on 85 farmers who visited PAU exhibition stall to get themselves registered for future extension activities of the university. A total of 85 were interviewed through questionnaire specially designed in order to know the status of dairy farmers in the state. It was found that maximum number of farmers were from district Moga (17.64%) followed by Ferozepur (16.47%) and Sangrur (12.94%), Ludhiana (8.23%) , Barnala (7.05%) and Mukatsar (5.88%)

INTRODUCTION

India has vast resource of livestock and poultry, which play a vital role in improving the socio-economic conditions of rural masses. There are about 303.76 million bovines (cattle, buffalo, mithun and yak), 74.26 million sheep, 148.88 million goats, 9.06 million pigs and about 851.81 million poultry as per 20th Livestock Census in the country. Livestock sector is an important subsector of the agriculture in Indian economy. It forms an important livelihood activity for most of the farmers, supporting agriculture in the form of critical inputs, contributing to the health and nutrition of the household, supplementing incomes and offering employment opportunities. It acts as a supplementary and complementary enterprise. Several measures have been initiated by the Government to increase the productivity of livestock, which has resulted in increasing milk production significantly. Milk production during 2020-21 and 2021-22 was 209.96 MT and 221.06 MT, respectively showing an annual growth of 5.29%. The per capita availability of milk is around 444 g/day in 2021-22.

Animal husbandry and dairying activities, along with agriculture, continue to be an integral part of human life since the process of civilization started. These activities have contributed not only to the food basket and draught animal power but also by maintaining ecological balance. Owing to conducive climate and topography, animal husbandry and dairying sectors have played prominent socio-economic role in India. They also played a significant role in generating gainful employment in the rural sector, particularly among the landless, small and marginal farmers and women, besides providing cheap and nutritious food to millions of people. Sharma *et al* (2013) reported that majority of dairy farmers were either land less or small and medium in the district Kapurthala. On the other

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Table 1. Proforma for *kisan* mela information about dairy farmers.

Sr. No.	Questions	Farmer 1	F2
1.	Name		
2.	District		
3.	Mobile No.		
4.	Total land (ha.)		
5.	Number of Cows		
6.	Number of Buffaloes		
7.	Feed Self prepared: YES/NO		
8.	Purchased from market. YES/NO		
9.	Mineral mixture used YES/NO		
10.	Silage YES/NO		
11.	Major problem faced in dairy		
12.	Total milk production daily (l)		
13.	Where do you sell milk?		
14.	Rate of milk (Rs/l)		
15.	Brand of feed		
16.	Cost of feed(Rs / 50 kg)		
17.	Homemade YES/NO		
18.	Shed type: Pucca, Kucha, Temporary, Scientific		
19.	No. of workers kept		
20.	Automatic milking machine available YES/NO		
21.	Want to increase dairy unit . YES/NO		
22.	Do you know about KVK in the district ? YES/NO		
23.	Are you coming for the first time kisan mela? YES/NO		
24.	Who told you about mela?		

hand, only 8 per cent farmers who were possessing land more than 10 ha. kept dairy animals which show that large farmers gave more attention to crop production than the dairy farming. Similarly, it was observed that 44.5 and 48.8 per cent of population was keeping up to 5 and 15 animals, respectively. Only 4.3 per cent farmers possessed between 16 to 25 animals and a very small population (2.4%) was possessing more than 25 animals. This showed that very few farmers were practicing dairy business on commercial scale (2.4%) and majority of farmers (93.3%) were having up to15 animals. Further, it was also noticed that dairy farmers (74.9%) were possessing cows with daily milk yield varying from 4 to 10 l/d and 85.8 per cent of farmers were keeping buffaloes with daily milk yield ranging between 2 to 8 l/d.

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by the university. Further, in order to disseminate latest technologies amongst farming community, it is essential to assess the training needs and availability of existing resources with the farmers. The present study was thus conducted to assess the status of dairy animals kept by those farmers who visited *kisan* mela during September,2022 in order to plan various extension activities to be undertaken in near future for the benefit of dairy farmers in the state of Punjab.

MATERIALS AND METHODS

During the *kisan* mela, the study was conducted on 85 farmers who visited PAU exhibition stall to get themselves registered for future extension activities of the university. A total of 85 were interviewed through questionnaire specially designed in order to know the status of dairy farmers in the state. The format is given as under:

Based on the filled performa, the data were arranged and classified depending on land possessed by a farmer. Different class intervals were 0-2ha., 2-4ha.,4-10ha. and more than 10 ha. Likewise, all the farmers were divided in these 4 groups and the information provided was classified accordingly.

RESULTS AND DISCUSSION

Participation of farmers

There are 23 districts in Punjab state and in this study, farmers from 21 districts participated. Maximum number of farmers were from district Moga (17.64%) followed by Ferozepur (16.47%) and Sangrur (12.94%), Ludhiana (8.23%), Barnala (7.05%) and Mukatsar (5.88%) (Table 5). It was revealed that there are 7 *kisan melas* organized by the university in different districts falling under 3 agro-ecological zones twice in a year. Those farmers who were not able to attend those *kisan* mela prefer to attend at the university main campus at Ludhiana. It was also noticed that at the main campus, farmers from all over the Punjab attended the *kisan* mela and took part in the study undertaken at the directorate level.

Table 2. District wise participation of dairy farmers in the *Kisan* mela organized by the PAU, Ludhiana.

Sr. No.	Name of the district	Number of farmers participated in *kisan* mela
1.	Ambala	1
2.	Amritsar	1
3.	Barnala	6
4.	Bathinda	2
5.	Faridkot	2
6.	Fatehgarh Sahib	2
7.	Ferozepur	14
8.	Gurdaspur	1
9.	Jalandhar	2
10.	Kapurthala	3
11.	Ludhiana	7
12.	Mansa	2
13.	Moga	15
14.	Mohali	2
15.	Mukatsar	5
16.	Patiala	2
17.	Ropar	1
18.	Samrala	1
19.	Sangrur	14
20.	Sirsa	1
21.	Tarn Taran	1
	Grand Total	85

Land holding

The data (Table 3a) show that there were 4 categories used to classify the farmers based on the land holding possessed by them. The maximum number of farmers were from 0 to 2 ha (32.94 %) category followed by 4ha to 10 ha (25.88%), 2 ha to 4 ha (21.17 %) and more than 10 ha (20.0 %).

Type of animals kept by the farmers

It was emphasized by the research institutes that rearing of crossbred cows is more economical compared to buffaloes but the findings revealed that small and large farmers preferred to keep both

Table 3a. Statistics of land holding, number of animals and milk production available with dairy farmers

Land holding (ha)	Average number of Cows kept	Average number of buffaloes kept	Total milk produced daily (L)	Total animals available	Average milk yield/animal
0-2	2.36	2.25	485	129	3.76
2-4	1.94	3.94	414	106	3.91
4-10	2.55	6.45	418	198	2.11
More than 10	1.94	1.94	248	66	3.76
Total	2.24	3.64	1565	499	3.14

cow and buffaloes in equal proportions (Table 3b). Farmers with land holding from 2-4 ha and 4 to 10 ha preferred to keep more buffaloes than cows. The probable reasons may be that since buffaloes are more efficient converters of low-quality feeds or coarse fodder. They require a relatively low level of inputs in the predominantly mixed farming systems, and are well known for their ability to thrive on low-quality crop residues and green forage under harsh climatic conditions. Moreover, buffalo milk has a higher fat, protein, lactose, vitamin, and mineral content than cow's milk. It's also whiter and has a thicker consistency, which makes it perfect for the production of fat-based dairy products. However, cows give more milk than buffaloes but buffalo milk fat content is twice as much as cow milk so buffalo milk gets better price. Milking a cow can be automated using milking machines - for buffaloes it is difficult. Therefore, it can be said that it depends upon the resources a farmer possesses. Similarly, marketing of milk plays a major role in deciding about the type of animals to be kept by different categories of the dairy farmers.

Average milk yield

The data about total milk produced daily by the farmers were recorded irrespective of type of animals kept by them. It was found that the average milk yield /animal/day was highest (3.91 L) with those farmers possessing land holding between 2-4 ha. This might be probably due to the fact that in category 0-2 ha land holding, there were some landless farmers, who may not be able to provide required quantity of feed and fodder to the animals what to talk of concentrate and mineral mixture feeding required for optimum milk production. Contrary to this, lowest average milk yield was recorded with farmers with 4-10 ha category (2.11 L) due to the reason that these farmers preferred to keep more number of buffaloes (142) than cows (56) and at the same time total number of animals kept were also maximum (198) and total milk yield

Table 3b. Average milk yield , land holding and feed preparation by different categories of farmers.

Land holding (ha)	Number of farmers	Total number of Cows	Total number of Buffaloes	Total land available (ha)	Average milk prod daily (L)	Number of farmers prepared feed at home
0-2	28	66	63	34.4	20.20	17
2-4	18	35	71	59.3	25.87	8
4-10	22	56	142	150.2	24.58	10
More than 10	17	33	33	100	16.53	8
Grand Total	85	190	309	343.9	21.73	43

Table 4. Type of commercial feeds used by the dairy farmers of Punjab.

Brand of feed	Number of farmers
Not Known	27
Amul cattle feed	5
Aashish	7
Binala	1
Cargill	13
Cotton Seed Cake	1
Goyal	1
G S Feed	1
Home Made	4
Jawala Feed	1
Markfed	2
Muskan	3
Sardar	4
Shahideep	1
Sampurna	3
Shudh Gold	1
Tara	1
Tiwana	2
Tractor	1
Trishul, Ramdev Patanjali,	1
Verka Feed	5
Grand Total	85

obtained was 418 L (Table 3a). It was observed that since maximum number of buffaloes was kept by these farmers and thus, due to low milk production potential of buffaloes, average milk yield value was reduced. Under such situation, it becomes very difficult to decide which animal species would be economical because cow milk is being sold in the villages @ Rs. 30/kg compared to buffaloes milk @ Rs 55/kg. Hence, ease of marketing farmers' produce will be the deciding factor in adoption of an enterprise by the participants.

Housing management

The study revealed that farmers preferred to keep the animals in pucca houses (77.64 %) than *kacha* (22.35 %) because government is providing incentives for shed construction on scientific way. In the present study, it was found that only 2 farmers constructed animals shed on scientific lines whereas others made sheds as per their own whim without consulting any expert. In such sheds, during high day temperature in summer, milk yield as well overall health conditions of the animals are affected adversely. Hence, it can be said that there is ample scope to educate the dairy farmers to make aware about the construction of dairy sheds which should be well ventilated, easy to clean and accommodate maximum number of animals in order to reduce cost of milk production besides keeping animals in good health conditions.

Feeding management

Farmers who possessed land are able to feed sufficient quantity of green and dry fodder but did

not feed concentrate due to high cost. Therefore, emphasis is given to prepare compound cattle feed at the household level so that margin of profit from dairy enterprise can be increased. The results revealed that 50 per cent farmers prepared cattle feed at home level and out of these, only small farmers (0-2 ha) preferred to prepare feed at home whereas medium (2-4 ha) and large (>10 ha) farmers were least interested. Sharma (2015) has reported that poor knowledge about the nutritive value of feed ingredients (86.5 %), high cost of raw feed ingredients (28 %), shortage of skilled and committed labour (32.5 %) were found to be major bottlenecks regarding adoption of cattle feed formulation technology at the dairy farm. Simultaneously, other 50 per cent purchased cattle feed of different brands available in the market. There were about 20 brands of cattle feed available in the market which dairy farmers were using at the dairy farms and the maximum popular brand was of Cargill (Table 4). Hence, it will be of interest to evaluate performance of available compound feeds under in vivo conditions because farmers keep on using these brands after discussion with the dealers or traders who are known to them.

Use of mineral mixture as feed supplement

It was revealed that only 50 per cent were making use of mineral mixture in the daily feeding schedule of dairy animals but again it is not used for feeding of young stock. This results in various types of nutritional deficiencies and as a result of reproductive problems were noticed. In a study Gupta *et al* (2017) reported that continuous feeding of mineral mixture bettered performance of dairy cross bred animal in respect of their production and reproductive performance.

CONCLUSION

It can be concluded that the average milk production of dairy animals per day per animal in the rural area was very low whereas it is perceived that there is marketing problem of milk. Further, with so little milk production, keeping of dairy animals can never be remunerative. Thus, there is need to educate the farmers about various management practices to be followed in order to enhance the total milk production per animal per day so that livelihood security can be ensured.

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