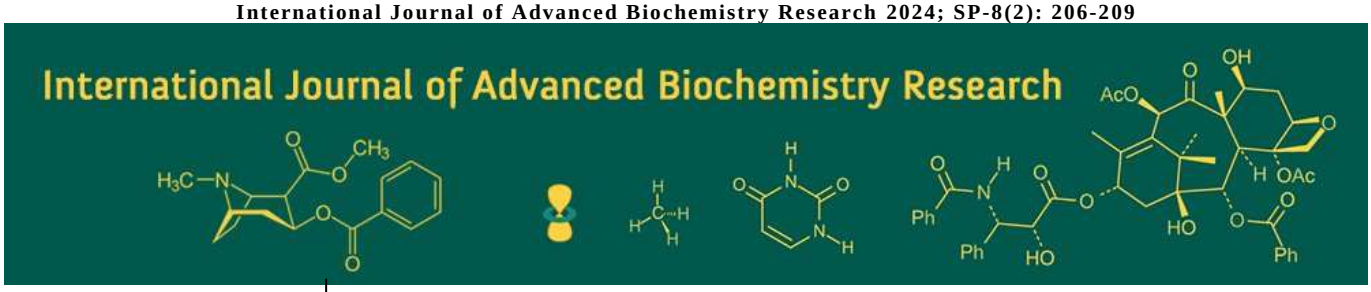

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A survey on socioeconomic status of buffalo rearers in Katni district of Madhya Pradesh

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Abstract
Dairy farming plays an important role in improving the economy of farmer in the country. A survey study was conducted to sea the socioeconomic status of farmer, animal status and dairying practices in the periurbon and rural area of Katni district of Madhya Pradesh. Five blocks of Katni district were selected purposively for the survey study. Five villages from each block which possess sufficient cattle and buffalo population had been considered for the study. A total of 500 cattle and buffaloes rearers were selected from the district (20 Farmers from each village). A questionnaire was prepared and data were collected from individual cattle and buffalo owner through personal interview regarding the farmers age, education, land holding, fodder cultivation, herd size and milking practices of buffalo.
Survey data revealed that the maximum surveyed respondents were below the age of 50 years and majority of them were either illiterate (23%) or educated up to junior school level. The most of the buffalo rears holding 1-2 hectare of land (35%) fallowed by medium (23%) and marginal (20.6%) farmers holding 2-4 ha and less then 1 ha land respectively. The large farmers holding above 4 ha land was less (13.6%) while landless were only 7.2%. Most of the respondents were not practicing the cultivation of green fodder and animal feeding mostly depends on wheat straw and paddy straw. Respondents occasionally provide common salt and rarely mineral mixture to their animals. Most of the farmers were having up to 10 animals in their houses. Majority of the buffaloes with respondent were medium yielders (49.2%) fallowed by poor (31.2%) and high yielders (19.6%). On the basis of our findings, it can be concluded that less educated, dominant population of low yielding animals, poor feeding and management practices are the main constraint of buffalo raising in the district.

Keywords: Socioeconomic, farmers, fodder, buffalo, milk production

Introduction
Livestock play an important role in strengthening the Indian economy. It provides nutritional and livelihood security for millions of rural households in the country. Since ages, cattle and buffalo have played complementary and supplementary role and maintained sustainable relationship with crops under mixed farming system prevalent in the country.
In spite of highest milk producers in the world, the productivity of our milch animals is very low because of large number of low producing nondescript animals, long calving intervals, poor feeding and lack of improved herd management practices. It has notice by several researchers that majority of the farmers did not have proper knowledge of scientific feeding and management practices of dairy animal which leads to deficiency of certain nutrients in animals diet and finally resulted to poor production and reproduction in cattle and buffalo (Tiwari *et al*., 2007; Ahirwar *et al*., 2010 and Bhanderi *et al*., 2013) [16, 1, 4].
Economy of dairy enterprises mainly depends on the efficient production and reproduction performances of animals. The educational status of the farmers has been found to positive influence on the livestock farming (Sagar *et al*., 1986, Tripathi and Kunzru., 1992) [13, 17]. More the education better would be the milk production and knowledge regarding improved dairy farming practices (Meena and Chauhan, 1999) [9]. Decision making on dairying depends on education and general awareness level of the family (Singh and Singh, 2002) [14]. This study will help to understand the farmer's socio economic status, animal status, feeding practices, nutritional and production status of animals for scientific dairy farming in the district.

Materials and Methods

Katni is situated at 23.83^0 latitude and 80.40^0 longitudes at 392 MSL in the southern part of second agro-climate zone, including Kymore plateau and Satpura hills of Madhya Pradesh. The climate of the district resembles to that of tropical regions with hot summer and cold winters. The temperature goes up to 48 °C during summer while it falls to 4 °C in winter. The district receives 1061 mm average rainfall in a year. A survey was conducted on existing socioeconomic status of farmer, animal status and management practices of buffalo in villages of Katni district of Madhya Pradesh.

Selection of villages

A random sampling method was used for the selection of blocks and villages. Five blocks of Katni district were selected purposively for the survey study. The blocks are Mudawara, Rithi, Bahoriband, Dhimarkheda and Vijayraghavgarh. Five villages from each block which possess sufficient cattle and buffalo population had been considered for the survey study. All the farmers who were rearing at least one milch buffalo were selected for the study. A total of 500 cattle and buffaloes rearers were selected from the district (20 Farmers from each village).

Data collection

A questionnaire was prepared, pre-tested and necessary modification was made in it. The data were collected from individual cattle and buffalo owner through personal interview regarding the farmers age, education, land holding, fodder cultivation area and herd size, feeding and milking practices of animals.

Results and Discussion

Age

The data presented in Table 1 related to age of the farmers revealed that majority of the farmers (29.4%) were under the age group between 31 to 40 years followed by 28% in the age group of 41 to 50 years, 25.2% up to 31 years and 17.4% in the age group above 50 years.

The majority of respondent in the district were in the age group of 31-40 years followed by 41-50 years. The finding is in line with Kumar *et al*. (2020), Singh *et al*. (2021) [15], Raghuvanshi *et al*. (2021) [12] and Bansod *et al*. (2022) [3], who reported that higher percentage of farmer were of middle age group as their main occupation was dairy farming where as yong persons were involved in other activity also.

Education

As regards the educational status of the respondent data in table 1 indicated that majority of them (34.80%) were educated up to primary school fallowed by illiterate (23%), junior school (21.2%), high school (14.4%) and above high school (6.6%) level. Thus, maximum of the farmers were having the qualification of primary school while minimum were with above high school education. Bansod *et al*. (2022) [3] recorded that respondent were illiterate 13.60%, while 38.40% educated up to middle level and 48.00% up to higher school and above level. Similarly Girish *et al*. (2020) also observed in Karnataka regarding dairy farmers education level and result revealed that 35.0% respondent had primary level education and 19.44% had middle school level education whereas 42.00% were illiterate in the study area. Singh *et al*. (2021) [15] recorded majority of respondents (25.15%) had middle level of schooling fallowed by 21.52% of respondents who had secondary level of schooling. Furthermore, it was reported that 16.67% and 14.24% of the respondents had higher secondary and primary level of education respectively.

In the present study, it was observed that the decision making on dairying depends on education and general awareness level of the family. Similar finding was noticed by Singh and Singh (2002) [14] in Haryana. Low productivity of buffaloes observed in the study, might be associated with the poor adoption of improved technology regarding feeding and dairy management practices and its poor understanding among illiterate and less educated farmers of the district. Studies by Tripathi and Kunzru (1992) [17], Sagar *et al*. (1986) [13] and Meena and Chauhan (1999) [9] have also reported positive and significant relationship between family education status with productivity of milch animals and knowledge regarding improved dairy farming practices.

Land holding size

The data related to land holding size of the farmers presented in Table 1 shows that among the various groups, mostly small farmers holding 1 to 2 ha land were maximum followed by farmers with medium (23.0%) and marginal (20.6%) land holdings. Large farmers were comparatively less (13.6%) and landless were surveyed lowest (7.20%) in the district. Bansod *et al*. (2022) [3] noticed that 48.80% farmer had above 5 acres land fallowed by 35.20% up to 5 acres of land and 16.0% landless farmer in their study. Singh *et al*. (2021) [15] noticed that majority of respondent (46.36%) were holding up to 1.0 ha land which were fallowed by 24.24% and 20.00% of the respondents who were small (1-2 ha) and semi medium (2.1- 4.0ha) land holder respectively. A very less proportion of the respondents (5.45%) had medium (4.1–10.0 ha) land holding fallowed by 3.94% of the respondent who were landless. The main reason for maximum involvement of marginal, small and medium farmers in buffalo rearing was concern with their family livelihood and nutritional security. Another important reason was to recycle the agriculture waste in the form of fuel and manure. Whereas, large size farmers were meeting their requirements from other sources and landless were mostly involved in labour work to earn money for their livelihood.

Area under fodder crop

The data of table 2 (a) revealed that cultivation of green fodder was not in common practice. Among the respondents, about 63.4% farmers were not practicing cultivation of green fodder while 29.8% were cultivating it in the area less than 1 acre. Only 6.8% farmers were cultivating green fodder in more than 1 acre of land in the district. The probable reason for less cultivation of green fodder was limited availability of land holding size and water with the farmers involved in dairy farming in the rural area.

The green fodder cultivation by the surveyed respondents was in very less area in comparison to demands of animals in the district. Most of the animals of respondents were depending for green fodder on pasture grass, weed and forest grazing. The present finding is supported by the report of Baghel *et al*. (2004) [2] who indicated that the area under fodder production was deficit in Madhya Pradesh. Grover

and Kumar (2012) [6] also reported that the average cultivated area included for fodder production was around 4 to 5 per cent of the total cultivated area.

Herd size

The data in table 2 (b) revealed that majority of the farmers (42.6%) were maintaining herd of 6-10 animals fallowed by 33% farmers having up to 5 animals in the district. Only 24.4% farmers were maintaining large herd size having more than 10 animals which can be attributed to the land holdings of the farmers, marketing facilities and availability of feed resources with them.

Bansod *et al*., (2022) [3] reported majority of respondents (42%) reared more than 6 animals and 33.20% were reared 4-6 animals whereas 24.20% farmers reared 1-3 animals. Similar results were recorded by Karthikeyan *et al*. (2018). However Singh *et al*. (2021) [15] found 48.79% of respondent reared 3-4 animal fallowed by 38.48% up to 3 animals and only 12.73% were rearing 4 and above animals. Prasad *et al*. (2019) [11] reported that maximum number (53.33%) of respondents had up to 3 milch animals. The majority of respondents maintained up to 10 animals is reflecting fact that daring is an important part of their income generating and family nutrition farming activities.

Milking and production status of buffaloes

Data in table 3 regarding milking pattern of the buffaloes were revealed that most of the respondents were milked their buffaloes twice in a day. The maximum percentage of buffaloes in the district were found medium yielder therefore milking two times in a day was sufficient to release udder pressure while milking once negatively affected the production performance of buffaloes. The respondents were well aware regarding negative effect of milking once. Twice milking was very common among farmers which were probably associated with farmer's routine activity. As the farmers remain free from other livelihood activity during morning and evening, same time animals were also halting in their houses.

The lactating buffaloes were categorized on the basis of milk yield per day. The average data of district revealed that majority (49.2%) of the buffaloes were medium yielder having potential to yield 2.5 to 5.0 liters milk per day followed by low yielders (31.2%) yielding less than 2.5 liters milk per day. Only 19.6% buffaloes were yielding more than 5.0 liters milk per day in the district. Prasad *et al*. (2017) [10] reported that the average milk yield of cattle was 66.00%. The higher contribution of low and medium yielder buffalo population in comparison to high yielders might be one of the major reasons of low milk production of buffaloes in the district, which had probably been aggravated by poor nutrition and management practices adopted by the respondents for buffaloes in the Katni district.

Table 1: Socio - economic status of surveyed respondent of Katni district (%)

Traits	Category	Mudwara	Rithi	Bahoriband	Dhimarkheda	Vijayraghavgarh	District
1. Age							
Up to 30 years		27.00	21.00	25.00	32.00	21.00	25.20
31-40 years		35.00	32.00	27.00	27.00	26.00	29.40
41-50 years		25.00	28.00	33.00	23.00	31.00	28.00
Above 50 years		13.00	19.00	15.00	18.00	22.00	17.40
2. Education							
Illiterate		14.00	23.00	21.00	32.00	25.00	23.00
Primary School (5th)		28.00	37.00	49.00	34.00	36.00	34.80
Junior School (8th)		26.00	20.00	21.00	19.00	20.00	21.00
High School (10th)		21.00	15.00	13.00	11.00	12.00	14.40
Above high school		11.00	05.00	06.00	04.00	07.00	06.60
3. Land holding size							
0.0 ha (Landless)		07.00	09.00	04.00	10.00	06.00	07.20
0 to <1 ha (Marginal)		24.00	18.00	22.00	19.00	20.00	20.60
1 to <2 ha (Small)		39.00	36.00	33.00	36.00	31.00	35.00
2 to <4 ha (Medium)		18.00	21.00	27.00	24.00	28.00	23.00
4 ha and above (Large)		12.00	16.00	14.00	11.00	15.00	13.60

Table 2a: Area under fodder cultivation of surveyed respondent of Katni district (%)

Traits	Category	Mudwara	Rithi	Bahoriband	Dhimarkheda	Vijayraghavgarh	District
1. Area under fodder crop							
Nil		51.00	68.00	62.00	70.00	66.00	63.40
Up to 1 acre		39.00	25.00	30.00	26.00	29.00	29.80
More than 1 acre		10.00	07.00	08.00	04.00	05.00	06.80

Table 2b: Herd size of surveyed respondent of Katni district (%)

2. Herd size	Mudwara	Rithi	Bahoriband	Dhimarkheda	Vijayraghavgarh	District
Up to 5 animals (Small)	31.00	34.00	37.00	33.00	30.00	33.00
6-10 animals (Medium)	40.00	45.00	39.00	41.00	48.00	42.60
10 and above animals (Large)	29.00	21.00	24.00	26.00	22.00	24.40

Table 3: Milking and production status of buffaloes of surveyed respondent of Katni district (%)

Traits	Category	Mudwara	Rithi	Bahoriband	Dhimarkheda	Vijayraghavgarh	District
1. Frequency of Milking							
a.	Once in a day	00.00	00.00	00.00	00.00	00.00	00.00
b.	Twice in a day	100.00	100.00	100.00	100.00	100.00	100.00
2. Milk yield							
A	<2.5 Liter per day	28.00	33.00	26.00	37.00	32.00	31.20
B	2.5- 5.0 Liter per day	40.00	51.00	53.00	50.00	52.00	49.20
C	5.0< Liter per day	32.00	16.00	21.00	13.00	16.00	19.60

Summery and Conclusion

Overall data clearly indicated that maximum surveyed respondents were below the age of 50 years and majority of them were either illiterate or educated up to junior school level. Most of the respondents were not practicing the cultivation of green fodder and animal feeding mostly depends on wheat straw and paddy straw. Most of the respondents were occasionally providing common salt and rarely mineral mixture to their animals. Majority of the buffaloes under study were medium yielders fallowed by poor and high yielders, respectively. On the basis of our findings, it can be concluded that low education, illiteracy, dominant population of low milk yielding animal, improper feeding practices and less milk price in rural areas were the main barriers in adoption of scientific feeding and managemental practices of buffalo raising in the district.

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