Socio-economic profile of Kalyana Gidda cattle rearing farmers of Northern Karnataka

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Abstract

The study was conducted among 60 farmers to know the socio economic status of the farmers owning Kalyana Gidda cattle in Raichur and Yadgir districts of Northern Karnataka and they were exposed to a structured interview schedule. The study found that the family type of the respondents was majorly joint type and most of the respondents were in middle age category, followed by old age and young age category. It was found that majority of the farmers had no education followed by primary education and large majority of the respondents had agriculture as their primary occupation followed by agricultural labour, business and animal husbandry. It was evident from the results that the majority of the farmers had animal husbandry (66.66 %) as secondary occupation. A considerable size (35 %) of the respondents belonged to small farmers category, followed by 33.33, 18.33, 8.33, and 5 % of respondents belonged to medium, marginal, large and landless category, respectively. The family income of most of the farmers (70 %) was below Rs. 40,000 followed by Rs. 40,000 to Rs. 80,000 (23.33 %) and only 6.67 % of them had higher income (>Rs. 80,000). It was observed that the average breeding bull holding by the farmers in the study area was higher in Yadgir block followed by Devadurga, Lingasugur and Surapur. Similar trend was observed for male and female calves holding. The average milking female holding was highest in Devadurga block followed by Yadgir, the female holding of Surpur and Lingasurgur was lesser. Similar trend was observed for bullock holding. The average milk yield recorded among all blocks was 2.27 L/day/cow in Kalyana Gidda cows.

Keywords: Socio-economics of cattle owners, cattle, Karnataka, Raichur, Yadgir

Introduction

India, is one among the world's twelve mega biodiversity countries, has a large and diverse cattle genetic resource (Srivastava *et al.,* 2019). The livestock is said to be the backbone of Indian agriculture because around 70 per cent of its population are involved in activities connected with farming and animal husbandry. Animal husbandry and agriculture are interdependent and have a major impact on the economic status of the country, since they both together contribute to the progress and prosperity of farmer. According to the 20th Livestock Census, India has the world's highest cattle population (13.1 per cent), accounting for 37.3 per cent of the country's total livestock. India has 192.49 million cattle population, an increase of 0.8 per cent compared to the previous Census. There are 50.42 million exotic/crossbred cattle and 142.11 million indigenous/non-descript cattle. Gene and gene combinations that livestock breeds carry may be useful to agriculture in future which makes them recognized as significant components of world biodiversity (Hall *et al.*, 1995). India has varied agro-ecological zones which helped to develop huge number of cattle populations.

In crossbred cattle, indiscriminate crossbreeding, a lack of exotic inheritance stability, and a lack of selection between F2 hybrids resulted in unfavourable consequences like increased disease susceptibility, reduced fertility, and reduction in production levels (Basu, 2009; Singh, 2016). Now there has been a revived interest in the conservation of purebred native draught cattle breeds and the initiation of selective breeding programmes targeting a variety of qualities over twenty years (Manomohan *et al.*, 2021).

When a livestock genetic resource initiative concentrates on features that boost the economic worth of the breed directly to the communities involved, its viability is critical. For each breed, a full set of descriptions should be developed on the basis of numerous profiles, such as distribution, habitat, body conformation, adaption, production, reproductive ability, performance and socio-economic characteristics. Therefore it is appropriate to assess the relevance of rearing native cattle in rural livelihood and to understand opportunities or challenges faced by smallholder dairy farmers. Therefore, this study was conducted with an objective to assess the socio-economic characteristics of the farmers rearing Kalyana Gidda, an unidentified cattle of north Karnataka and to suggest appropriate intervention for cattle rearing systems in its breeding tract.

Materials and methods

Locale of the study
The current study was conducted purposively in Raichur and Yadgir districts of Karnataka because it is breeding tract of non-descript cattle called as Javari and named as Kalyana Gidda.

Sampling Location (Geography, Climate and Distribution)
Karnataka State is located between 11.50° and 18.50°North latitudes and 74° and 78.50° East longitudes. The North Eastern Dry Zone, spread over 1762604 ha, accounts for 9.26 per cent of the total geographical area (1,91,791 sq.km.) of Karnataka State. It is situated between 15° 57' and 17° 36' north latitude and 76° 6' and 77°33' east longitude. This zone comprises 5 blocks (Afzalpur, Chittapur, Gulbarga, Jewargi, and Sedam) of Gulbarga district, 3 blocks (Shahapur, Shorapur and Yadgir) of Yadgir district and 3 blocks (Devdurga, Manvi and Raichur) of Raichur district. Annual rainfall is between 633.22 to 806.6 mm.
This zone indicates the predominance of rain dependent dry land agricultural area. Total livestock population in Yadgir and Raichur districts were 10,05,218 and 13,14,529, respectively. The cattle population in the Yadgir district is 2,33,336 and in Raichur district is 2, 45,374.

Selection of respondents
Yadgir and Raichur districts were selected and classified in to four blocks; two from each district were selected randomly. From each block 15 respondents were randomly selected for taking the information regarding socio economic status of farmers rearing non-descript cattle. All respondents had at least one animal at the time of data collection. All the farmers with Kalyana Gidda cattle in each village were selected to identify the cattle of Kalyana Gidda type.

Statistical analysis
The collected data were scored, compiled, tabulated suitable statistical methods with help of using Microsoft Excel, 2016. The data collected was analysed using simple statistical tools such as averages, frequencies and percentage.

Results and discussion

Family type and age

The results of the socio economic status of the farmers rearing non-descript cattle in Yadgir and Raichur districts are presented in Table 1 and Fig 1. The respondents who were involved in management of Kalyana Gidda cattle were only selected as it determines the maturity of an individual and has a bearing on thinking, experience, decision making and exposure of a person. The family type of the respondents was majorly joint type (56.67 %) and nuclear type (43.33 %). Most of the respondents were in middle age category, followed by old age category and young age category. The results obtained are similar to Mahesh *et al*. (2020) they found that middle aged dairy farmers were more in Yadgir district. Similar findings were also reported by Rathod *et al*. (2020) and Pasare *et al.* (2022) in Bidar district of Karnataka. Gautam *et al.* (2007) observed that majority of dairy farmers were middle aged with a mean age of about 43 years among the dairy farmers in Haryana.

Education

Education is generally believed to have effect on widening the mental horizon of a person and thereby prepares and predisposes him to be receptive to new ideas. The block wise education levels of farmers have been depicted in Table 1 and Fig 1. It was clear that 3.33 % of the respondents were educated up to college level, 26.66 % had high school level of education, 31.66 % of them had primary school education and 38.33 % were illiterate. Lack of schools, economic status of farmers, remote locations and a low level of education in the area all contributed to lower levels of education in Yadgir and Raichur districts. Mahesh *et al*. (2020) found that 31.00 % of the farmers had high school education, 25.00 per cent of the farmers had middle school, 15.00 % of them were illiterate, 14 % had primary school, Pre University (11.00 %) and graduation and above had attained by only 4.00 % of farmers in Yadgir district. The probable reason for the majority of respondents were educated up to high school and middle school level might be the reason that improper facilities of schooling available in vicinity of villages. More number of illiterate farmers might be due to illiteracy of their parents, poor exposure on importance of formal education and low socio economic status. Similar findings were observed by Kumar (2001) and Roy (2004). Whereas, Gopi *et al.* (2017) found that nearly half (45.00 %) of the respondents were illiterate followed by high school education, primary school and middle school education. These findings were also in line with the results of Gautam *et al.* (2007) and contrast to the results of Lohakare *et al.* (2013) and Panchbhai *et al.* (2017).

Occupation

It could be observed from the Table 1 and Fig 2, that a large majority (70 %) of the respondents had agriculture as their primary occupation followed by agricultural labour (11.66 %), business (5 %), animal husbandry (5 %) and only 3.33 % of them were having jobs. It was evident from the results that the majority of the farmers had animal husbandry (66.66 %) as secondary occupation, followed by agriculture (25 %). Majority of the respondents had Agriculture as their main occupation. The respondents raised cattle as a secondary source of income in addition to using the milk and milk products for their own consumption. Similarly, Mahesh *et al*. (2020) found that in Yadgir district majority of the farmers had agriculture as main source of occupation and animal husbandry as a secondary occupation. Pasare *et al*. (2022) also found similar results among the farmers rearing indigenous cattle in Bidar district of Karnataka. Bashir and Kumar (2013) also found that most of the respondents practiced crop farming as a major occupation. Kannan (2005) in his study reported that majority of respondents practiced dairying as subsidiary occupation (40 %), as against agriculture, which was the main occupation.

Category of respondents

In the present study, a considerable size (35 %) of the respondents belonged to small farmers category, followed by 33.33, 18.33, 8.33, and 5 % of respondents belonged to medium, marginal, large and landless category, respectively as depicted in Table 1 and Fig 3. The distribution of land holding clearly indicates that cattle rearing were a secondary source of income generation for small, medium and large farmers but primary source of income for those landless and marginal farmers. In Yadgir district, Kanakaraj *et al.* (2022) found that the farmers in Yadgir district had marginal (80%) land holding has a majority followed by small (15 %) and large (5 %) land holdings. This might be due to joblessness and poverty which was led to family disputes in farmers' community. Khode *et al.* (2009) also reported that most of the respondents belonged to large farmer's category. Patel et al. (2005) revealed that slightly more than half of the respondents (52 %) were found to have small size of land holding (1.1 to 2.0 ha. of land), followed by marginal (40 %) size of land holding (up to 1.0 ha. of land). Only 8.00 % of the respondents fell in the category of medium size of land holding (2.0 ha of land). These findings are in agreement with the findings of Verma (2016) who also reported that majority of respondents were.

Table 1. Socio economic profile of farmers rearing non-descript cattle of North Karnataka

Parameters	Yadgir		Raichur		Overall (N=60)
	Shorapur (n=15)	Yadgir (n=15)	Devadurga (n=15)	Lingasugur (n=15)	
Family details					
Nuclear	8 (53.33%)	6 (40%)	6 (40%)	6 (40%)	26 (43.33%)
Joint	7 (46.66%)	9 (60%)	9 (60%)	9 (60%)	34 (56.66%)
Age					
Young (<35)	3 (20%)	2 (13.33%)	3 (20%)	4 (26.67%)	12 (20%)
Middle (35-50)	8 (53.33%)	11 (73.33%)	9 (60%)	6 (40%)	33 (55%)
Old (>50)	4 (26.66%)	3 (20%)	3 (20%)	5 (33.33%)	15 (25%)
Education					
Illiterate	7 (46.66%)	7 (46.66%)	3 (20%)	6 (40%)	23 (38.33%)
Primary	4 (26.66%)	3 (20%)	8 (53.33%)	4 (26.66%)	19 (31.66%)
High school	4 (26.66%)	5 (33.33%)	3 (20%)	4 (26.66%)	16 (26.66%)
College	0	0	1 (6.66%)	1 (6.66%)	2 (3.33%)
Primary Occupation					
Agriculture	10 (66.66%)	9 (60%)	11(73.33%)	12(80%)	42 (70%)
AH	1 (6.66%)	2 (13.33%)	0	0	3 (5%)
Labour	3 (20%)	2 (13.33%)	3 (20%)	2 (13.33%)	7 (11.66%)
Business	0	1 (6.66%)	1 (6.66%)	1 (6.66%)	3 (5%)
Job	1 (6.66%)	1 (6.66%)	0	0	2 (3.33%)
Secondary Occupation					
Agriculture	3 (20%)	5 (33.33%)	4 (26.66%)	3 (20%)	15 (25%)
AH	11(73.33%)	8 (53.33%)	11 (73.33%)	10 (66.66%)	40 (66.66%)
Labour	0	1 (6.66%)	0	0	1 (1.66%)
Business	0	1 (6.66%)	0	2 (13.33%)	3 (5%)
Job	1 (6.66%)	0	0	0	1 (1.66%)
Farm characteristics					
Landless	1 (6.66%)	0	0	2 (13.33%)	3 (5%)
Marginal (<1 ha)	3 (20%)	1 (6.66%)	4 (26.66%)	3 (20%)	11 (18.33%)
Small (1-2 ha)	6 (40%)	4 (26.66%)	5 (33.33%)	6 (40%)	21 (35%)
Medium (2-10 ha)	4 (26.66%)	7 (46.66%)	5 (33.33%)	4 (26.67%)	20 (33.33%)
Large (>10 ha)	1 (6.66%)	3 (20%)	1 (6.66%)	0	5 (8.33%)
Annual family income (Rs.)					
< 40000	11(73.33%)	9 (60%)	10 (66.66%)	12 (80%)	42 (70%)
40000-80000	3 (20%)	4 (26.67%)	4 (26.67%)	3 (20%)	14 (23.33%)
>80000	1 (6.66%)	2 (13.33%)	1 (6.66%)	0	4 (6.67%)
Kalyana Gidda cattle holding (heads)					
Breeding bull	0.33	0.93	0.67	0.33	0.57
Male calf	1.07	2.87	1.80	1.13	1.72
Adult female	2.60	7.67	7.86	2.80	5.23
Heifers	1.10	3.93	4.07	1.73	2.71
Female calf	1.20	5.00	3.33	1.26	2.69
Bullock	0.67	0.67	0.80	0.53	0.67
Daily milk Yield (L)/ Cow	2.12	2.51	2.14	2.30	2.27

small and marginal. Whereas, Panchbhai *et al*. (2017) reported that 35.00 % of respondents belonged to small farmers category, 22.50 % belonged to the category of marginal and 19.50 % to the category of medium farmers. Only 19.00 % farmers belonged to large category and 4.00 % farmers were landless, respectively

Family income

Income is a crucial variable, which influences the farmer's investment in farming activities. The income obtained from various sources *viz*., crop, livestock and others as reported by the respondents were considered in order to calculate the gross annual income per family. In present study the family income of most of the farmers (70 %) was below Rs. 40,000 followed by Rs. 40,000 to Rs. 80,000 (23.33 %) and only 6.67 % of them had higher income (>Rs. 80,000). In contrast, Singh (2019) found that the average family income of the respondents of Haryana cattle owners from all sources was around Rs. 1,15,412. They also mentioned that
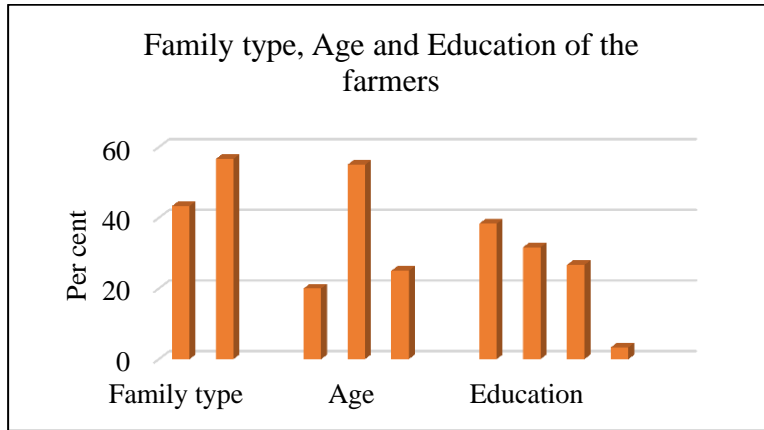
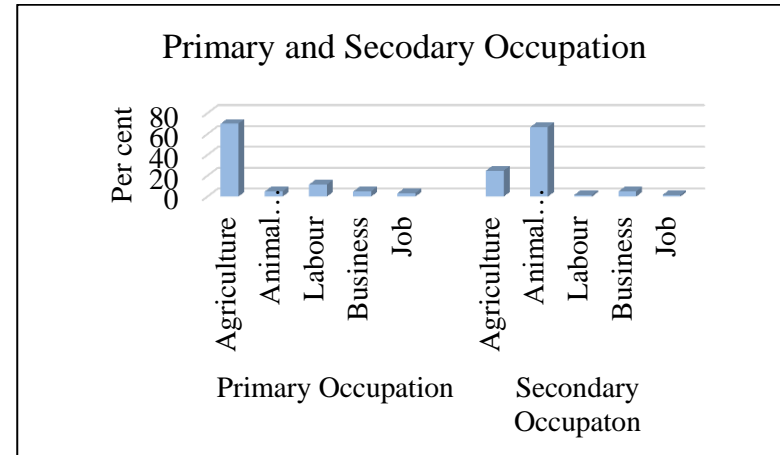Fig 1. Family, Age and Education of farmers rearing Kalyana Gidda cattle

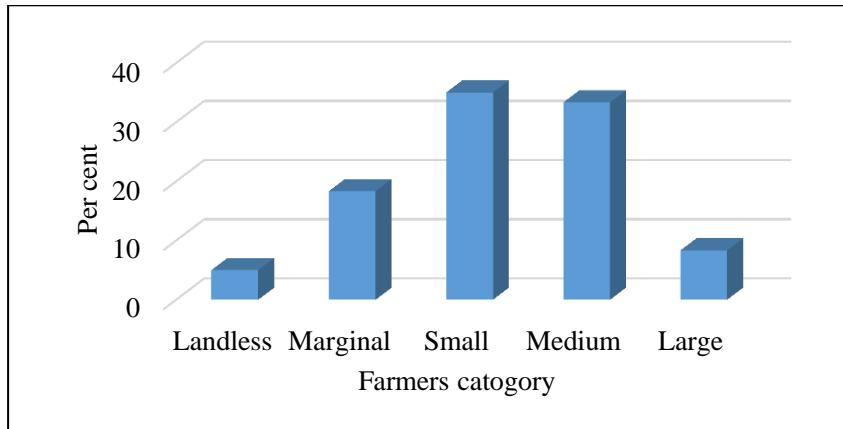Fig. 2. Occupation of farmers rearing Kalyana Gidda cattle

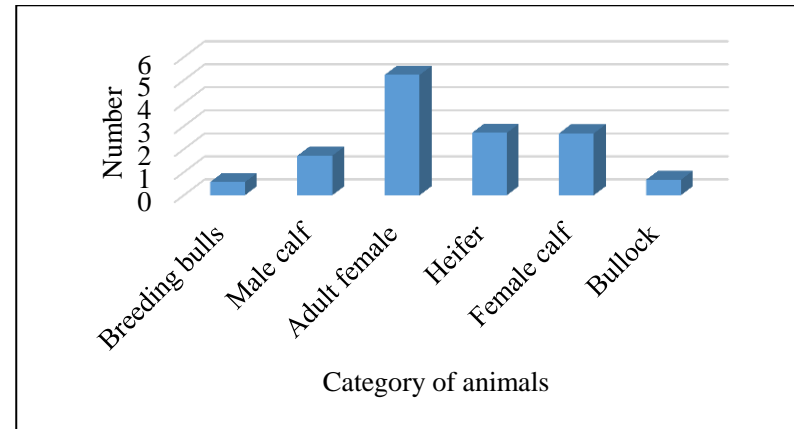Fig 3. Characteristics of farmers holding Kalyana Gidda cattle

Fig 4. Average cattle holdings of farmers in Raichur and Yadgir districts

annual income of 45.00 % of the respondent was Rs. 40,000 to Rs. 1,50,000, followed by 31.67 % of the respondent had less than Rs 40000 annual income and 23.33 % respondent had more than Rs. 150000 annual income. It might be due to the fact that farms and livestock give more annual income for dairy farmers as compared to other sources like labour, job etc. Panchbhai *et al.* (2017) reported that the majority of the respondents (46.50 %) were in medium income group followed by low income (27.00 %) and high income (26.50 %), respectively. Whereas, Chandrasekar *et al.* (2017) reported that majority of the respondents had low income followed by medium and few were high income among dairy farmers of rural areas of Bangalore in Karnataka.

Kalyana Gidda cattle holding (No.)

The Kalyana Gidda cattle holding of respondents of different blocks of Yadgir and Raichur districts have been depicted in Table 1 and Fig 4. It was observed that the average breeding bull holding by the farmers in the study area was higher in Yadgir block followed by Devadurga, Lingasugur and Surapur. Similar trend was observed for male and female calves holding. The average milking female holding was highest in Devadurga block followed by Yadgir, the female holding of Surpur and Lingasurgur was lesser. Similar trend was observed for bullock holding.

Daily milk yield (L)/ Cow

The average daily milk yield per cow was 2.51 L, 2.14 L, 2.30 L and 2.12 L in Yadgir, Devadurga, Lingasugur and Surapur blocks, respectively. The average milk yield recorded among all blocks was 2.27 L in Kalyana Gidda cows. The milk yiled is lesser compared to to Deoni cattle (Patil et al., 2015) and Krishna Valley, the average daily milk yield of Krishna Valley was reported as 3.17±0.53 kg with the minimum yield of 1.5 kg to a maximum of 8 kg (Karthickeyan *et al.*, 2006).

Conclusion

The middle aged farmers were more among the Kalyana Gidda cattle keepers along with more number of either having no education or having primary education. The family income of most of the farmers (70 %) was below Rs. 40,000 per annum. The average milking female holding was highest in Devadurga block followed by Yadgir, the female holding of Surpur and Lingasurgur was lesser. Similar trend was observed for bullock holding. The average milk yield recorded among all blocks was 2.27 L/day/cow in Kalyana Gidda cows. Therefore, this study can be helpful to design any research program meant for improvement of Kalyana Gidda breed in present scenario in its breeding tract.

Conflict of interest

The authors declares no conflict of interest.

Acknowledgement

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