

Research paper

Socio-economic status of Dangi cattle rearers in Ahmednagar district of Maharashtra

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ABSTRACT

The present investigation was carried out to study the socio-economic status of Dangi cattle owners in Akole block of Ahmednagar district of Maharashtra. A sample of 335 Dangi cattle owners were randomly selected from 7 villages during 2015-16. Primary data was collected through structured questionnaire on family type, land holding, herd size and animal management practices. The results revealed that majority of Dangi farmers (70.75 percent) lived in nuclear family having medium family size (51.94 percent). Majority of the farmers reared Dangi animals for agricultural operations (81.79 percent) with small herd size (57.62 percent). Natural breeding practice (61.79 percent) was preferred to Artificial Insemination. Mostly the animals were allowed for free grazing (85.98 percent). Most of the farmers followed clean milking practices like cleaning udder (96.42 percent) and milking utensils (97.91 percent) etc and also follow vaccination of animals (75.22 percent). The animal housing was in *kachha* roof (55.82 percent) and *kachha* floor (87.16 percent) with closed byre (58.81 percent) to protect animals from adverse conditions.

Keywords: Dangi cattle, livestock, socio-economic status, animal management practices.

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INTRODUCTION

Livestock plays an important role in Indian economy. About 20.5 million people depend upon livestock for their livelihood. Livestock sector provides employment to about 8.8 percent of the population in India. Livestock sector contributes about 25.6 percent to the agricultural GDP and 4.11 percent to national GDP of India (19th livestock census-2012 all India report). Agriculture being only seasonal, the animal husbandry provides off-season work, steady income and keeps the rural population employed throughout the year. The overall growth rate in livestock sector is steady and is around 4-5 percent per annum and this has been achieved despite the fact that investment in this sector was not substantial. The ownership of the livestock is more evenly distributed with landless labourers and marginal farmers owning the bulk of livestock (Gokhale, 2003). The significance of indigenous cattle is immense in diverse conditions across varied management practices of the country. The indigenous livestock population is highly adaptable to the local conditions and capable of thriving under it.

Dangi is registered cattle breed with accession number India_Cattle_1104_Dangi_03004 at national level (<http://www.nbagr.res.in>). Dangi breed is originated from Dang District of Gujarat, and mostly found in Akole block of Ahmednagar district and Sinner, Igatpuri block of Nasik district of Maharashtra. The breed is medium size, sturdy in high rain due to its oily skin and hard hoof with excellent working abilities in rice fields as well as on hill rocks. Six strains named as *Bhahala*, *Manhera*, *Kala*, *Khaira*, *Shevra*

and *Para* found based on colour coat. *Bhahala* is the most acceptable strain by the farmers. White colour with black patches on body and side of face with bulging head, black switch and hoof with shiny skin are the typical characters of *Bahala* strain. Considering the importance of Dangi breed in particular climatic conditions of Akole block in Ahmednagar, breed conservation effort was made under Maharashtra Gene Bank Programme. In order to understand socioeconomic profile of the farmer rearing Dangi cattle, a study was undertaken in selected villages of Akole block in Ahmednagar district of Maharashtra.

MATERIALS AND METHODS

A field survey was conducted to collect information on array of existing housing, feeding and management practices followed by Dangi animal owners in randomly selected seven villages in Akole block of Ahmednagar district during 2015-16. The study area is geographically situated at 19°53'N and 74°01'E and receives annual rainfall of 1058 mm (https://en.wikipedia.org/wiki/Akole_taluka). The data was collected through specially designed questionnaire by face to face interview of 335 farmers. The information was collected on family size, literacy, land holding, animal herd size, animal husbandry practices followed, etc. The data was analyzed and tabulated by using standard statistical methods.

RESULTS AND DISCUSSION

The data collected from farmers rearing Dangi cattle was analysed, tabulated and presented in Table 1 and 2.

Family type and size: In this survey, Dangi cattle owners

were grouped in two type's i.e. nuclear and joint family. It was observed that majority (70.75 percent) of the Dangi cattle owners lived in nuclear families and the rest were living in joint families (29.25 percent) (Table 1). This may be due to influence of low per capita land holding and urbanization. This result was in accordance with the finding of Prajapati *et al.* (2016) who reported 85 percent nuclear and 15 percent joint families in their field survey. It was observed that around 36.72 percent were having small family size (1-5 members) followed by 51.94 percent medium sized family (6-10 members) and 11.34 percent large family size (>10 member). These observations were nearly matching to that of Prajapati *et al.* (2016); who reported 59.5 percent small and 40.5 percent large families. The family members migrate for work and feel better and comfortable life with small families in relation with easy adjustments. This might be the reason for small family size.

Land holding pattern: The Dangi farmers were grouped in four types according to land holding i.e. landless, small (< 5 acres), medium (6-10 acres) and large (> 10 acres). It was observed that majority of the farmers were having small land holding 54.92 percent, followed by medium (31.05 percent) and large (9.85 percent). Prajapati *et al.* (2016) had reported similar findings with 56.5 percent small land holdings. It was observed that 77.88 percent farmers have seasonal irrigation facility and 22.11 percent were depending on rain fed agriculture, similar observations reported by Gokhale (2003). Majority of Dangi cattle owner

(91.34 percent) have agriculture with animal husbandry as main occupation whereas 8.66 percent were agricultural labour as secondary source of income. Thombre *et al.* (2010) reported 95 percent in agriculture and its allied business and 5 percent as agricultural labours.

Literacy: Adoption of any new technology is mostly depending on the education status of the farmers. Data indicated that 64.18 percent farmers were literate and 35.82 percent were illiterate. Rathod *et al.* (2011), reported similar findings in their study.

Herd size: Dangi cattle breed owners were classified according to the size of Dangi cattle herd owned by them as shown in Table 2. It was observed that 57.62 percent farmers having small herd size (1-5 animals) whereas 30.44 percent had medium size (6-10 animals) and 11.94 percent had large herd size (>10 animals).

Animal Breeding: Most of the livestock farmers (61.79 percent) used natural service and 38.21 percent used artificial insemination for breeding their animals. This might be due to lack artificial insemination facility as well as lack of awareness among farmers in the study area.

Animal housing: Animal housing plays critical role in adoption of better animal husbandry practices for enhancements of qualitative and quantitative livestock production traits for more profitability and sustainability to the farmers. Majority of the livestock farmers (92.54 percent) tied their animals only in the night hours while remaining tied their animal in shed both during day and night time (7.46 percent) with stall feeding as shown in

Table 1: Classification of Dangi cattle owners based on family type, family Size, occupation, land holding, irrigation and number of Dangi cattle

Particulars	Category	Frequency	No. of Dangi cattle
		(N=335)	(N=1990)
Family type	Nuclear	237 (70.75)	1343 (67.49)
	Joint	98 (29.25)	647 (32.51)
Family size	Small (1-5)	123 (36.72)	722 (36.28)
	Medium (6-10)	174 (51.94)	946 (47.54)
	Large (Above 10)	38 (11.34)	322 (16.18)
Land Holding in Acres	Small (<5 Acres)	184 (54.92)	1155(58.04)
	Medium (6-10 Acres)	104 (31.05)	623 (31.31)
	Large (>10 Acres)	33 (9.85)	154 (7.74)
	Landless	14 (4.18)	58 (2.91)
Irrigation facility	Seasonal irrigation	257 (77.88)	1488 (74.77)
	Rain fed	64 (22.11)	444 (22.31)
Occupation	Agriculture with Animal Husbandry	306 (91.34)	1836 (92.26)
	Labor work	29 (8.66)	154 (7.74)
Literacy	Literate	215 (64.18)	1315(66.08)
	Illiterate	120 (35.82)	675 (33.92)

Figures in parentheses indicate the percentage

Table 2. Herd size, breeding and utility pattern and animal management practices followed by Dangi farmers

Particulars	Category	Frequency (N=335)
Herd Size	Small (1-5 animals)	193 (57.62)
	Medium(6-10 animals)	102 (30.44)
	Large(>10 animals)	40 (11.94)
Breeding methods	Artificial Insemination (AI)	128 (38.21)
	Natural Service (NS)	207 (61.79)
Animal housing	Night	310 (92.54)
	Day and Night	25 (7.46)
Type of shed	Open byre	138 (41.19)
	Closed byre	197 (58.81)
Type of Shed Roof	Kaccha	187 (55.82)
	Pakka	148 (44.18)
Type of Floor in shed	Kaccha	292 (87.16)
	Pakka	43 (12.84)
Location of shed with house	Attached with house	260 (77.61)
	Separate from house	75 (22.39)
Utility pattern of Dangi Cattle	Milk Production	20 (5.97)
	Agricultural operations	274 (81.79)
	Reproduction	5 (1.49)
	Race, Exhibition, Sire production	26 (7.76)
	Religious	10 (2.99)
Feeding pattern	Grazing	288 (85.98)
	Stall feeding	47 (14.02)
Hygiene	Clean milking utensil	328 (97.91)
	Clean udder before milking	323 (96.42)
Deworming	Practice followed	126 (37.61)
Vaccination (FMD, HS, BQ)	Practice followed	252 (75.22)
Most occurring diseases	BEF	102 (30.45)
	BQ	68 (20.30)
	FMD	165 (49.25)
Animal market practices	Animal fair, exhibitions	283 (84.48)
	Agents	11 (3.28)
	Weekly market	41 (12.24)
Fodder cultivation	Yes	197 (58.81)
	No	138 (41.19)
Use of Chaff cutter	Practice followed	133 (39.70)
	Practice not followed	202 (60.30)

Figures in parentheses indicate the percentage

Table 2. Animal house type with closed byre (58.81 percent) and open byre (41.19 percent) was found. About 56 percent Dangi cattle farmers had *kaccha* roof while 44.18 percent had *Pakka* roof, 87.16 percent farmers had *kaccha* flooring while only 12.84 percent had *Pakka* floor in the animal byre. These findings are in close conformity with the earlier reports of Gokhale (2003) but are in contrast to findings of Mahila (2013) who reported 26 percent *Pakka* floors and 6.87 percent *kaccha* floor of

Kankrej cattle. It was also observed that majority of the Dangi farmers (77.61 percent) kept their animals inside dwelling house, followed by 22.39 percent who kept outside the dwelling house.

Utility pattern: Main choice indicated was for agriculture operations (81.79 percent) followed by bull production for breeding as well as exhibitions (7.76 percent) followed by milk production (5.97 percent) in Dangi cattle. Very few farmers reared livestock for religious purpose (2.99

percent). Gokhale, 2003 reported 29.31 percent, 22.59 percent and 15.04 percent farmers utilized Dangi animals for agricultural operations, milk production and breeding purpose, respectively.

Animal Feeding pattern:

It was observed that majority of farmers (85.98 percent) followed grazing practices and remaining followed stall feeding (14.02 percent). It was also found that 58.8 percent farmers cultivate fodder for feeding animals and 39.7 percent used chaff cutter for cutting the straw before feeding green fodder.

Hygiene: It was observed that majority of the livestock farmers (97.91 percent) clean the utensils used for handling milk and 96.42 percent respondent cleaned udder before milking. This practice has ensured hygienic milk production by Dangi farmers.

Deworming and vaccination: It has been observed that 37.61 percent farmers have regularly followed the deworming of animals and 75.22 percent farmer had vaccinated their animals against FMD, HS and BQ vaccine which are provided Animal Husbandry department, Govt. of Maharashtra. Foot and Mouth disease (49.25 percent) followed by Bovine Ephemeral Fever (30.45 percent) and Black Quarter (20.30 percent) was most commonly reported diseases affecting Dangi cattle's epidemic in study area.

Animal marketing: In the present study, 84.48 percent farmers sold or purchased their animals through village level animal fair and exhibitions and about 12.24 percent through weekly market while very few (3.28 percent) operated through middlemen.

CONCLUSION

The farmers rearing Dangi cattle for agricultural operations and for milk, most of the farmers have small land holding, small herd size, following grazing practices and breeding through natural service. Animal housing was in *kaccha* roof and flooring and inside dwelling house. Hence it may concluded that breed improvement along with proper feeding management practices is necessary in enhancing the animal productivity for better economic returns to the farmers, thereby improving their socio-economic status..

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