



ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2021; SP-10(11): 1051-1054
© 2021 TPI
www.thepharmajournal.com
Received: 01-09-2021
Accepted: 03-10-2021

Mona Sharma
Department of Animal Genetics and
Breeding, Nanaji Deshmukh
Veterinary Science University,
Jabalpur, Madhya Pradesh, India

Mohan Singh Thakur
Department of Animal Genetics and
Breeding, Nanaji Deshmukh
Veterinary Science University,
Jabalpur, Madhya Pradesh, India

Shrikant Joshi
Department of Animal Genetics and
Breeding, Nanaji Deshmukh
Veterinary Science University,
Jabalpur, Madhya Pradesh, India

Madhu Sudhan Tantia
ICAR-National Bureau of Animal
Genetic Resources Karnal, Haryana,
India

Rekha Sharma
ICAR-National Bureau of Animal
Genetic Resources Karnal, Haryana,
India

Ajit Pratap Singh
Animal Biotechnology Center, Nanaji
Deshmukh Veterinary Science
University, Jabalpur, Madhya
Pradesh, India

Akhilesh Pandey
Department of Animal Genetics and
Breeding, Nanaji Deshmukh
Veterinary Science University,
Jabalpur, Madhya Pradesh, India

Vaishali Khare
Department of Animal Genetics and
Breeding, Nanaji Deshmukh
Veterinary Science University,
Jabalpur, Madhya Pradesh, India

Rajesh Kumar Vandre
Department of Animal Genetics and
Breeding, Nanaji Deshmukh
Veterinary Science University,
Jabalpur, Madhya Pradesh, India

Asad Khan
Department of Animal Genetics and
Breeding, Nanaji Deshmukh
Veterinary Science University,
Jabalpur, Madhya Pradesh, India

Corresponding Author
Mohan Singh Thakur
Department of Animal Genetics and
Breeding, Nanaji Deshmukh
Veterinary Science University,
Jabalpur, Madhya Pradesh, India

Survey of socioeconomic status of farmers and distribution of cattle population in the Mahakaushal region of Madhya Pradesh

Mona Sharma, Mohan Singh Thakur, Shrikant Joshi, Madhu Sudhan Tantia, Rekha Sharma, Ajit Pratap Singh, Akhilesh Pandey, Vaishali Khare, Rajesh Kumar Vandre and Asad Khan

Abstract

The survey study of socio-economical status of the farmers and distribution of cattle population were performed at Mahakaushal region of Madhya Pradesh. Mahakaushal, a region of central India, lies in the upper or eastern reaches of the Narmada river valley in the Indian state of Madhya Pradesh. The surveys of cattle population was based on the suitable formats and questionnaires for collecting all possible relevant information of cattle population of this region. Survey was indicated that the cattle population was distributed in entire Mahakaushal region of the Madhya Pradesh particularly in Jabalpur, Mandla, Dindori, Seoni districts and in parts of adjoining districts including Narsinghpur, Balaghat, Chhindwada, Katani and Umaria. The overall socioeconomic status of farmers was poor in all the districts. The annual income of farmers of Jabalpur and Mandla districts was slightly higher than the farmers of Dindori and Seoni districts; it might be due to slightly higher irrigated lands (1-3 acres) and literate family members (4-5). The farmers in Mahakaushal region mainly depends upon the pasture feeding for their livestock. Grazing was preferred by the farmers for their animals starting from about 5-6 month of age. The mating normally occurs during grazing. It was revealed that on an average 90 percent farmers housed their animals only at night while 10 percent of farmers housed them both day and night. Most of animal houses floor and drainage was *kachcha* type. The survey was the first attempt to study the demographic and geographical distribution in Mahakaushal region of Madhya Pradesh.

Keywords: breeding tract, Mahakaushal, socioeconomic, survey

1. Introduction

Indian economy is mainly based on agriculture and livestock where, livestock are a major source of livelihood security for small and marginal farmers. Apart from being an important source of human nutrition, it is also a source of crop nutrition, power for agricultural tillage, rural transportation and a valuable asset which can be easily encashed during emergencies. Cattle have a direct influence on agricultural production. In India, where over 75 per cent farmers are small and marginal land holders, cattle are the main source of livelihood for a majority of the rural population. The contribution of livestock to the national and agricultural GDP is about 4.35 and 29.72 per cent, respectively. Livestock have been contributing about 15–20 per cent to the household income of farmers, which has been steadily increasing during recent years (National Accounts Statistics, 2021).

India has the largest number of livestock (535.78 million), representing over 17% of the world population. As per the 20th livestock census, the total cattle population in India is 192.49 millions showing an increase of 0.80 per cent over previous census. However, there is a decline of 4.42 per cent in total number of cattle (18.70 millions) in Madhya Pradesh over the 19th livestock census (BAHFS, 2020) [1]. The cattle population under study were mainly present in the interior areas of districts and villages which are close to the forest area where hardly any facility for A.I. was available. During the survey, it was found that the cattle population was in the pure form because the mating of animals was mainly based on natural service and A.I. was rarely preferred by the farmers. The present study has been planned to assess socioeconomic status of farmers and distribution of Cattle population in the Mahakaushal Region of Madhya Pradesh.

2. Materials and Methods

The survey was planned to study the demographic and geographical distribution of cattle in Mahakaushal region of Madhya Pradesh. During the survey, the concentration of cattle population was taken into consideration along with socioeconomic status of the framers. This study reveals the information on the socio-economic status of farmers (through face to face interview), their livestock management practices.

3. Results and Discussion

3.1 Breeding tract

The breeding tract of cattle under the present study has been

shown in the figure 1. The cattle population was distributed in entire Mahakaushal region of the Madhya Pradesh particularly in Jabalpur, Mandla, Dindori, Seoni districts and in parts of adjoining districts including Narsinghpur, Balaghat, Chhindwara, Katani and Umaria. The cattle population under study were mainly present in the interior areas of districts and villages which are close to the forest area where hardly any facility for A.I. was available. During the survey, it was found that the cattle population was in the pure form because the mating of animals was mainly based on natural service and A.I. was rarely preferred by the farmers.

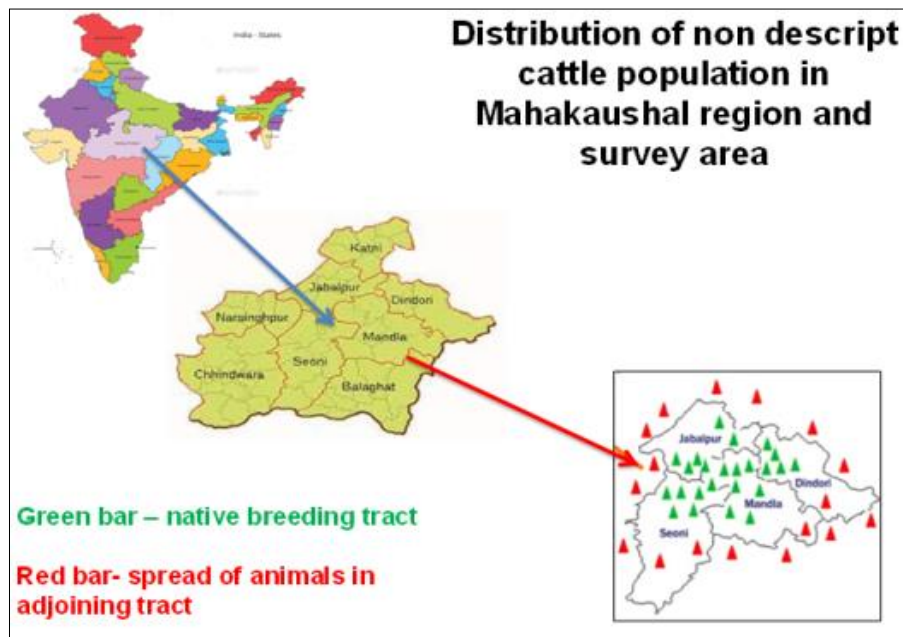


Fig 1: Distribution of cattle population in Mahakaushal region of M.P.

3.2 The native environment and climate

Mahakaushal region is a part of central India, lies within the upper or eastern reaches of the Narmada river valley within the Indian state of Madhya Pradesh. The region lies in between Latitude: 23° 08' 60.00" N Longitude: 79° 55' 58.80" E. The Mahakaushal region is also known as Maikal hill zone. The climate of the Mahakaushal is humid subtropical, as is typical of north-central India. The geography and climatic description of districts of the breeding tracts is presented in table 1.

3.3 Soil, feed and fodder

The overall soil in entire Mahakaushal region is Black type. It was observed that wheat, paddy, maize, jowar, etc. cereals were grown. The farmers mainly depend upon the pasture grazing for their livestock. There were only few farmers (1-2%) that grow fodders (Barseem, Lucerne etc.) for their animals. The grass was available mainly during the rainy season and also in winter season. It was observed that grasses such as *samai*, *gunhari*, *kandhia* etc. were given to livestock as per availability in the area. The wheat straw and dry grasses were fed to animals during summer season.

Table 1: Geographical and climatic description of the breeding tract

Particulars	Districts			
	Jabalpur	Mandla	Dindori	Seoni
1. Topography				
Latitude (N)	23° 10' N	22° 06' N	22° 04' N	22° 08' N
Longitude (E)	79° 56' E	80° 36' E	81° 07' E	79° 57' E
Height from mean sea level	411 m	624 m	678 m	612 m
Geographical area	5198 sq. km.	8771 sq. km	6128 sq. km.	8758 sq. km.
2. Climatic condition				
Temperature	8-47 °C	10-43 °C	3.1-43.6 °C	11.3-40.3 °C
Annual rain fall (mm)	1279.5 mm	1392 mm	1450 mm	1323 mm
Humidity	54 - 82%	41 - 84%	25 - 79%	34 - 88%

Source: <https://www.timeanddate.com/weather/india/>.

Table 2: Age wise and sex wise distribution of buffalo population in Mahakaushal region

Age wise and sex wise distribution of cattle population									
Districts	Up to 1 year		1-3 year		Above 3 years				Total
	Male	Female	Male	Female	Male		Female		
					Bull	Bullock	Milk	Dry	
Jabalpur	325	682	410	788	107	67	798	1465	4642
Mandla	322	596	281	614	74	48	719	912	3566
Dindori	359	580	374	736	65	41	627	1134	3916
Seoni	103	475	65	610	74	11	356	753	2447
Total	1109	2333	1130	2748	320	167	2500	4264	14571
Percent	7.61	16.01	7.76	18.86	2.20	1.15	17.16	29.26	

3.4 Demographical and geographical distribution

In the present study, total 14571 animals were covered under demographic survey in the Mahakaushal region of Madhya Pradesh. It was observed that in the whole breeding tract farmers were maintaining appreciable number of animals. The age and sex wise population distribution of cattle population surveyed in Mahakaushal region has been presented in table 2. In all the age groups, the population of female was larger than that of male. It could be due to the fact that female animals are mainly reared for milking purpose and bulls are not preferred for draught purpose (Table 2).

3.5 Socio-economic status of farmers

The information regarding the socioeconomic status of farmers of Jabalpur, Mandla, Dindori and Seoni districts have been obtained by random survey using questioners. The average agricultural status of farmers of these districts was comparable. The overall socioeconomic status of farmers was poor in all the districts. The annual income of farmers of Jabalpur and Mandla districts was slightly higher than the farmers of Dindori and Seoni districts; it might be due to slightly higher irrigated lands (1-3 acres) and literate family members (4-5). Agricultural Status of farmers of Dindori and Seoni districts was lower as compare to other two districts. The averages of Agriculture holding land(Acre), Irrigated land (Acre), Annual Income (Rs), Family members (No.), Male family members (No.), Female family members (No.), Literate members (No.), Male members engaged in animal husbandry (No.), Female members engaged in animal husbandry (No.) and No of houses covered (No.) was 1 to 3.12, 1 - 2.43, 12000 – 63750, 5 – 6.25, 2.25 – 3.50, 2.25 - 3.25, 3 - 4.5, 1.5 to 2.5, 1.25 - 2.25 and 1000, respectively.

3.6 Housing, feeding and management practices

It was observed that mostly farmers housed their animals only at night (90%) while very few farmers (10%) housed their animals during day and night. This was more or less a general practice prevailing in all districts. The close housing system (85%) was mainly followed than open housing system (15%). The *kachcha* type of house and floor with half height wall (98%) was mostly used for housing the animals. About the 80 per cent animals house was besides the resident of farmers and 20 per cent farmers had separate animal's houses. Most of the animal houses had no drainage system (95%). The hygiene and sanitary condition of the animal houses was very poor. It was observed that only 1-2 per cent of farmers grown fodder in the breeding tract. The animals were mainly depends upon pasture feeding (98-99%). The feeding with chaffed green fodder was less common (1-2%). Raw feeding was practiced by 95 per cent farmers whereas soaked feeding was practiced by 5 per cent of the farmers in the targeted districts. As revealed by survey cooked feeding was not

practiced at all. Feeding at the time of milking was practiced by majority of the farmers (90%). It was observed that almost all the farmers were conscious about the hygiene and therefore, cleaning of milking utensils and washing of udders before milking was a common managerial practice (Table 4). The source of water for animals was river, nala, canals, well, ponds and tank. Water availability for animals was adequate except during the summer season. Overall adequacy of water was about 80 per cent. Sometimes problems aggravated at time of poor rainfall. In general, pasture grazing was preferred by the farmers for their animals. The cattle in the region are commonly released for grazing in the morning and returned home in the evening from grazing land. The animals practically depend upon grazing the whole day in the forest area with nominal feeding of concentrates once a day at the time of milking. Animals were taken for grazing immediately after morning milking or by about 7- 8 A.M. and returned back to their home in the evening by about 6-7 P.M. The place, where animals were gathered during grazing is known as *Khirka*. The mating normally occurs during grazing. An animal attendant, known as Charwaha looks after the animals of entire village. During the summer, the animals roam freely in the Wardi system. It was observed that grazing land distance was 2-3 km from the villages. The young suckling calves of six months of age and above are also allowed for grazing with their mother by majority of farmers. In the breeding tract, the animals were depended upon pastures for their feeding. However, sometimes they were given *bhusa* and local grasses depending upon the availability. It was observed that very few farmers fed concentrate to their livestock. Concentrate was given to animals only during milking time. The concentrate fed to these animals included *aata* (flour), *choker* (bran) and sometime *khali-chuni* etc. Individual feeding rather than group feeding were practiced at the time of milking. Natural service practiced by majority of farmers. It was observed that in interior areas there was no any facility of A.I., so farmers depends upon natural breeding with common buffalo bull that was available in *Khirka*.

In association with the present findings, Singh *et al.* (2020) reported that 6-10 hrs grazing (53.70%) was most common practice in the breeding tract of Gangatiri cattle in eastern Uttar Pradesh. In Gangatiri cattle 54.63 per cent were given natural services between 12 to 16 hrs after detection of estrus and mostly farmers kept their cattle on *kachcha* floor (81.48%). Similar to present study Kumar *et al.* (2017) [6] reported that majority (58.3%) of the respondents preferred grazing and stall feeding in Rathi, Tharparkar and Sahiwal cattle in Bikaner, Jodhpur and Sriganganagar districts of Rajasthan. Majority of farmers (77%) in villages of Nainital district Uttarakhand used natural service in cattle due to lack of good quality semen in the region. Meena *et al.* (2007) [4]

accessed that majority of the farmers do not know the proper time of the vaccination and their survey indicates that farmers in the area are totally dependent on the locally available feeding resources like oak tree leaves and unclassified grasses self grown in the forest area for feeding of their animals round the year. Breeding of animals is mainly through natural service with available bulls due to poor facility of artificial insemination. Deficiency of quality feed and fodder, poor conception rate of artificial insemination prolonged age at first calving (4-6 years), unhygienic housing/ resting place of animals and poor disease management system. Naik *et al.* (2013) ^[5] observed more or less similar socio-economic status and management practices followed by dairy owners and farmers in Goa. Only 8 per cent farmers of Goa had dairying as primary occupation and during rainy season majority of farmers used naturally grown karad grasses.

4. Conclusion

The study revealed that the cattle population mainly distributed in Jabalpur, Mandla, Dindori, Seoni and adjoining parts of the districts. The Socioeconomic status of farmers was poor in majority of survey districts. The *Kachcha* type of housing was observed mainly in the surveyed area. The farmers mainly depend upon the pasture feeding for their livestock. The present study was the first attempt for demographic and geographic survey of the Mahakaushal region of Madhya Pradesh.

5. Acknowledgements

The authors are thankful to the NBAGR, Karnal to carry out this research work under project and University authorities NDVSU, Jabalpur for providing all the necessary facilities to conduct the study.

6. References

1. Basic Animal husbandry and fishery statistics (BAHFS), Government of India, <http://www.dahd.nic.in>. 2020.
2. National Accounts Statistics. Central Statistical Organization, Government of India. <http://mospi.nic.in>. 2021.
3. Singh A, Kumari T, Lalhriatpuii Melody, Shinde K, Devidas A *et al.* Gangatiri cattle: A lifeline for sustainable livelihood. The Pharma Innovation Journal 2019;8(5):551-554.
4. Meena HR, Ram H, Singh SK, Mahapatra RK, Sahoo A *et al.* Animal husbandry practices at high altitude (> 6000 feet) in Kumaon region of Uttarakhand, India. Livestock Research for Rural Development 2007;19:163.
5. Naik PK, Dhuri RB, Swain BK, Karunakaran M, Chakurkar EB *et al.* Analysis of existing dairy farming in Goa. Indian Journal of Animal Sciences 2013;83(3):299–303.
6. Kumar S, Subash S, Jangir R. Feeding and milking management practices adopted by indigenous cattle farmers in thar desert of Rajasthan. Journal of Animal Health and Production 2017;5(1):14-18.