

*Research paper***Physical characteristics of a new cattle population “Bawri”
in Chambal region of Madhya Pradesh**

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ABSTRACT

Survey was conducted for exploration of new cattle germplasm in six districts of Chambal division of Madhya Pradesh. A unique cattle population “Bawri” was explored in Bijaipur Block of Sheopur district of Chambal subdivision. Further its distribution was also found to be in Morena district. Physical characteristics of Bawri cattle were studied for breed differentiation. Information about production, reproduction traits, migration pattern and other management system for Bawri/Garri cattle was also collected. The Bawri cattle are raised by Gurjars for milk under extensive system in ravine areas. The animals are medium in size; moderate to wild in temperament; coat is red-tan splashed with white colour; pink muzzle, eye lashes are blue, white to pink horns, lower side of belly is white in colour; hooves and tail switch; long and pointed horns, very large dewlap, small navel flap, adapted to low water intake and grazing in rough terrain of ravine area. Milk production is 2-4 Kg. Total population of Bawri cattle might be about 20-25 thousand. Local indigenous cattle are being preferred in this area due to adaptation of high temperature as well less intake of water. This indigenous cattle germplasm of Madhya Pradesh showed distinction in its physical characteristics and found to be different from the existing registered cattle breeds. The data generated in the study would be useful to characterize them in detail.

Keywords: Cattle, Madhya Pradesh, Chambal region, native germplasm

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Manuscript accepted: 08.08.2019

INTRODUCTION

In India, more than 70% of the population depend on agriculture and allied sector and dairying has been an important source of income for millions of small household farmers engaged in agriculture. Milk is a major contributor to GDP from livestock sector to the Indian economy. As per 19th livestock census, India has world's largest cattle population of about 190.90 million of which 79% is indigenous and 21% is cross breed and exotic cattle. India ranks first in milk production, but average daily milk production of indigenous cattle is very low 2.84 Kg compared to cross breed and exotic cattle breeds 7.5 Kg (BAHS, 2017). Indigenous cattle breeds have the innate capacity to survive under harsh conditions and produce with limited inputs. However, population of the indigenous animals have reduced in the recent

decades due to several reasons including neglect of their genetic strengths and their genetic dilution through uncontrolled crossbreeding and interbreeding. The major reasons for negligence of local breeds of cattle are urbanization, industrialization as well as market competition in dairy sector (Mathias & Mundy, 2005). Moreover, the farmers are facing difficulty to fulfill the productive and management requirement of cross breed cattle. Also, farmers are deprived of their benefits due to the low procurement price per litre of milk. Hence, our indigenous breeds need both genetic improvement as well as conservation programme to overcome this situation. Therefore, we need a greater genetic variation within local breeds in comparison to cross breeds which might facilitate the identification of breeds that are more economically and environmentally adaptable with good production

performance. Such traits can be further implemented in selection programs in which indigenous breeds may top the list for their potential value in Indian dairy sector.

In India, maximum number of non-descript cattle population is present in Madhya Pradesh. Total area of Madhya Pradesh is 308,252 sq. km and has been divided into 11 agro-climatic zones. Total cattle in the state is 19602366 and the non-descript cattle is about 16323199, which accounts for about 83% of the total cattle population. The population of different Indigenous cattle breeds in Madhya Pradesh are: Sahiwal- 36866; Tharparkar- 5618; Malvi- 682522; Nimari - 341828; Gir - 112161; Haryana - 33660 and Kenkatha - 61819 (Livestock census data, 2012). Apart from the different exotic cattle population in the state are: Jersey - 31424, Jersey Cross - 704565; Holstein Friesian - 4770 and Holstein Friesian cross - 136414. In Madhya Pradesh, the breeding policies adopted in the 7 breeding zones are: Zone 1 - Upgradation with Haryana followed by selective breeding with Haryana. Cross breeding in Urban & Sub-urban areas.; Zone II - Crossbreeding Jersey cattle; Zone III - Selective breeding with Malvi; Cross Breeding with Jersey & HF; Upgradation with Malvi/Tharparkar; Zone IV - Selective breeding with Nimari; upgradation with Tharparkar; Cross breeding in Urban and Sub-urban areas; Zone V - Upgradation with Thari breed; Upgradation with Sahiwal adjoining Jabalpur; Zone VI - Selective breeding with Kenkatha; Upgradation with Haryana in rural areas; Zone VII - Upgradation with Thari, Sahiwal; crossbreeding in urban areas. Upgradation and crossbreeding is mostly carried out where the non-descript cattle population is present. The upgradation and crossbreeding of the non-descript cattle population will lead to the dilution of the existing native population. Hence, in the present study, Zone I and Zone II are taken for further investigation. In Zone 1, three different districts exists with varying number of the indigenous non-descript cattle population (Bhind - 102030; Morena - 129199; Gwalior - 182221) and in Zone II (Shivpuri- 527805 and part of Guna - 352976). The aim of the present study is to carry out an exploratory survey to explore homogenous population that was

different from the extant cattle breeds in the area under study.

MATERIALS AND METHODS

A transact exploratory survey was carried out to characterize native cattle in different villages of Bhind, Morena, Sheopur, Gwalior, Guna and Datia districts of Madhya Pradesh and further explore homogenous population that was different from the extant cattle breeds. During the survey, recording and clustering of primary physical characters for identification of homogenous populations and differentiating populations for identifying potential breeds based on phenotypic characteristics was carried out. Moreover, comparison of physical traits of different cattle populations for adaptation and performance was also undertaken during the survey. Finally, efforts were also made for identifying threats and to assess the risk factors to the different cattle populations.

RESULTS AND DISCUSSION

Gwalior and Chambal Division (Bhind, Morena, Sheopur, Gwalior and Datia districts) of Madhya Pradesh was having the white and grey type cattle, as mixed populations distributed across the region. These cattle mostly reared for milk purpose and produce 2-7 Kg milk/ day. In Dang (ravine) areas of Gwalior, pastoralism is also followed by Gurjar community. Since, it is a non-homogenous population and without any demarcation of native tract; the population does not qualify to be a breed. However, the traits and characteristics may be corroborated and compared with that of extant native cattle breed(s) in vicinity (specially Mewati, Kenkatha and Malvi); to mark this population to their type /grade(s). A unique cattle population was explored in Bijaipur Block of Sheopur district that was different from the existing registered cattle breeds. Locally known as "Bawri" (also known as Garri) is being raised by Gurjars for milk under extensive system in ravine areas (Figure 1). The breeding tract of Bawri cattle also exists in Morena district, beside Sheopur district of Madhya Pradesh. The farmers keep the animals on migration pattern for fodder and water requirement of the animals. Gurjar and Kushwaha community peoples raise the Bawri cattle and Yadav communities raise the native



Fig. 1. Bawri Cattle of Madhya Pradesh

buffaloes. For physical distinctions: it is medium in size; moderate to wild in temperament; coat is red-Dan splashed with white colour; white to pink horns, hooves and tail switch; long and pointed horns, adapted to low water intake and grazing in rough terrain of ravine area. Milk production is 2-4 Kg. Herd size is about 20-80; with a population size of about 20-25 thousand within defined area. Farmers of the area are losing the interest in cattle rearing due low cost of cow milk, declining use of male calves, low

productivity of cows, declining fodder availability etc. Due to all these reasons, cattle were abandoned and strayed in most of the places, causing a huge menace in the region and further driving to the people to rear buffaloes, instead. Crossbreds in ravine region were having poor adaptability, due to higher fodder and water requirements.

ACKNOWLEDGEMENTS

The authors thank Director, ICAR-NBAGR and Animal Husbandry Department of Madhya Pradesh for the support to carry out this research work.

Competing Interests: The author(s) declare no competing interests.

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