

Native Cattle Breeds of Kerala

Farm animals have been an integral part of Kerala Agriculture. Indigenous cattle breeds that require less feed and care, having high adaptability and disease resistance were used for milk production and as draft animals. Among these, the Vechur cow has been recognized as indigenous breed of Kerala. Moves are afoot to get the Kasargod dwarf cattle, another dwarf breed, to be included in the list of native cattle breed of Kerala by the National Bureau of Animal Genetic Resources(NBAGR), Karnal, Faridabad.

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Vechur Cow

The Vechur cow is acknowledged by the Guinness Book of World Records as the smallest cow in the world (90 cm in height). Vechur cow is an indigenous breed of Kerala and got its name from a small place near Vaikom in Kottayam district of South Kerala, the village where it is thought to have evolved. It comes in Light red, Black, White and Grey colours. This diminutive cow, weighing on an average 107 kg, can give an average yield of 3 litres of milk per day. Proportionate to its body weight, the Vechur cow yields maximum milk in the world. The small size, low feed requirements, high disease and adorable nature made the Vechur cattle dear to small farmers of Kerala for centuries. Vechur cattle were well adapted for the hot, humid tropical climate of Kerala. Vechur bulls, although small in size (maximum height at hump level 105 cms), were very strong and used for ploughing paddy fields till 1960. Vechur cattle were abundant in Kottayam, Ernakulam and Alappuzha districts of Kerala. A Government programme of crossbreeding of native cows with exotic bulls for higher milk yield was implemented during 1960's. Maintaining productive, indigenous bulls were forbidden by the newly enacted Kerala Livestock Act, 1961 and artificial insemination was given a boost.

The Act stated that "No person should keep a bull for breeding if it attains a particular age except with license and other terms and conditions unless certified to be castrated". The Act covered the entire male cattle that have reached the breeding age. As a result, the number of indigenous cattle gradually declined. By 1980's the Vechur cattle became nearly wiped out. But bulls dedicated to the temples were exempted from provisions of the Act. Thus the Siva Temple of Vaikom had its role in averting the extinction of the breed. Now about 200 cows of the variety exist in Kerala.

Conservation

The Vechur Conservation Project was launched in the Veterinary College, Trissur in July 1989 with a small herd of 4 cows, 1 heifer, 2 bull calves and a bull. The searching for animals continued by the team and 24 animals could be added to the lot in one year. During 1998, the animals in the Kerala Agricultural University Unit were multiplied and could sell out about 30 animals for establishing some field units. These units receive required inputs like semen and technical advice from Kerala Agricultural University. In the beginning of the project was funded entirely by the KAU, but soon the ICAR came to its support with a 'Scheme on Conservation of Germplasm of Vechur Cattle'.

A dynamic breeding programme was undertaken to produce as many pure Vechur cattle as possible. Embryo-transfer Technology was employed to produce more progenies of females with good breed characteristics within a short span of time. Kerala Veterinary and animal Sciences University has established 60 field units to conserve Vechur Cow. Nucleus Stock is also maintained in the farm of the University. Vechur Conservation Trust is functioning at Mannuthy, Thrissur, Kerala devoted to conservation of Vechur cow and other indigenous farm animals breeds of Kerala. Project for conservation and genetic improvement of Vechur cattle by Vechur Conservation Trust is funded by Kerala State Biodiversity Board.

The Vechur cow has also engrossed international acknowledgement as the Food and Agriculture Organization (FAO) has listed it among the Indian breeds in their Domestic Animal Diversity Information System. The World Watch List of Domestic Animal Diversity, published by the (FAO, has listed the Vechur cattle under the category of Critical Breeds.

Research

Detailed characterization studies of the Vechur cattle have been taken up by the Kerala Agricultural University (KAU). According to these studies the acrocentric nature of the Y-chromosome establishes that the Vechur cattle belong to the species of the Zebu cattle (*Bos indicus*) as different from the European cattle (*Bos taurus*) which has metacentric Y-chromosome. Infant mortality has been found to be almost nil in Vechur cattle under farm conditions. It has also been observed by the scientists of the KAU that these dwarf animals are quite resistant to foot and mouth disease and mastitis two diseases which are highly disastrous to hybrid cows of Kerala. Studies also confirmed that compared to crossbred cows, significantly lower incidences of respiratory infections have been reported from Vechur cattle.

Medicinal Milk

Milk analyses done in the Kerala Agricultural University now support the informations given in ancient ayurvedic texts. Studies concluded that the percentage of fat and total solids in the milk of Vechur cows is higher compared to crossbred cows. A more note-worthy aspect is the size of the fat globules. The mean size of fat globule in the milk of the Vechur cow (3.21 microns) is higher than that of the goat (2.60 microns) but considerably smaller than that of the crossbred cows (4.87 microns) and of Murrah Buffalo (5.85 microns). The small size of fat globules means high phospholipid content because of greater surface area. Phospholipids are important in the development of brain and nerve tissues and also play a vital role in the absorption and digestion of fat. Since the Vechur cow

milk has got higher percentage of smaller fat globules and saturated fatty acids, it would be therapeutically useful in malabsorption syndrome (Malabsorption syndrome is an alteration in the ability of the intestine to absorb nutrients adequately into the bloodstream). This proves that Vechur cow milk and its products are suitable for infants and the sick.

New Finding

The Lactoferrin protein in milk is known for its nutritional value. A group of scientists from SCMS Institute of Biotechnology in Kochi has found that lactoferrin in Vechur cow's milk is a good alternative to ampicillin, an antibiotic which is being used widely. The study was published in the International Journal of functional and evolutionary genomics-GENE. As per the finding, the anti-bacterial property of the lactoferrin protein of the Vechur cow milk is more than that of the antibiotic ampicillin. The lactoferrin is present in the milk of all mammals and is found to have antimicrobial, antiviral, antitumor, immunodefence and anti-inflammatory properties. But the study proves that in the case of the lactoferrin protein in the Vechur cow milk, these properties are much more enhanced. The roots of this enhanced therapeutic property lie in the large number of 'amioacid Arginine substitution' in the lactoferrin gene of Vechur cow.

Kasaragod Dwarf Cow

The Kasaragod dwarf cattle is a small indigenous cow breed (average size 95cms) that can survive on kitchen scraps and jungle forage. This allows people in the mountain jungles of Kasargod area to nurture the cattle without having to grow or harvest hay or paddy stalks as cattle feed. The Kasaragod breed was a contender form a Guinness Book of Records entry for its small size along with Vechur cows. But on an average, the former is slightly taller than the latter.

Zero Maintenance

Kasaragod cattle are low milk producing animals and the

average yield is around only one litre per day under average management conditions and this is usually just sufficient to feed its calf. Kasargod cattle are generally used for the generation of manure by Kasargod farmers as an integral part of homestead farming. With the growing acceptance of the concept of zero – budget farming, the demand for Kasargod dwarfs has also gone up.

Conservation

The species has not entered the endangered list in a strict sense as the non-descript category of dwarf cattle found in the district are generally included under this category. As per latest cattle census, there are 36,717 non –descript category of cattle in Kasargod. But, tracing a pure Kasargod breed will be difficult because of the extensive cross-breeding. The Kerala Livestock Development Board (KLDB) is gearing up to take up the conservation of four rare native breeds of cattle, including the Vadakara dwarf, Kasargod dwarf, Wayanad spotted cows, and Kuttanad water buffalo.



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