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Popular Article

Advantageous Donkey Breeds of Gujarat

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Introduction

One of the most important members of the Equidae family in today's global culture is *Equus asinus*. African animals are the ancestors of donkeys (*Equus asinus africanus*). Over the millennia, asses have expanded over Asia, India, Southern Europe, and the Americas since they were domesticated around 4,000 years before the time of Christ (B.C.) (Mclean and Gonzalez, 2018). Donkeys are one of the ancient domesticated livestock. In developing countries donkeys are valued in particular for their ability to survive under harsh conditions (Bwanga, 2008), yet they are often regarded as animals of low social status and neglected by research and development organizations (Starkey, 1995).

Throughout history, donkeys have served a variety of functions as a multipurpose animal, including dairy farming, entertainment, equestrian rides, transportation, and irrigation (Rangel *et al.*, 2015). Furthermore, because to their superior physical resistance over horses, donkeys continue to play a significant role in the production of mules and burros (muares). In areas where agriculture still relies on animal traction, donkeys can thrive in harsh environments and serve a beneficial purpose. Consequently, a rich history of social, cultural, economic, and ecological significance is linked to donkeys (Cavallarin *et al.*, 2015).

Breeds of donkey:

Kachchhi donkeys

Gujarat's Kachchh District is home to Kachchhi donkeys, which are a registered breed in India (Accession No.: INDIA_ DONKEY_ 0400_ KACHCHHI _05003). Grey (ventral



surface white, dorsal surface grey) is the predominant coat color, with white, brown, and black coming in order. The head is rounded. The nose bone is erect. Height at wither is between 77 and 115 cm. Docile in temperament. Only donkey used for agricultural purpose like Inter cultivation for weed removing. Also utilized for transportation as donkey cart, as pack animal during pastoralist migration, etc. Can carry approx. 80-100 Kg on back and can pull 200-300 Kg on cart. Population size is approximately 1700.

Halari donkeys

Halari (Accession No: INDIA_DONKEY_0400_HALARI_05002) has black stripes and a white body and a convex white forehead. It has strong build and huge size. Male are typically 108 cm tall, while female are 107 cm tall. A males body length is typically 117 cm, while a females is 115 cm. India's districts of Rajkot, Dwarika and Jamnagar in the state of Gujarat are home to this breed. That breed of donkey is the most common in the area. As pack animals, their primary function is material transportation. Being accustomed to animals, they are extremely courteous. Halari donkeys are strong. Throughout the migration, jogging 30–40 km each day. With their good bearing capacity, halari donkeys resemble miniature horses.

Donkey milk:

Milk from other animal species, including goats and donkeys, could be used as human milk substitutes. Over the past ten years, there has been an increase in interest in donkey milk as a human milk substitute worldwide. Owing to its distinct characteristics, donkey milk seems to be an excellent substitute that can help children with a cow's milk protein allergy as well as individuals who are intolerant to highly hydrolyzed milk-based formulas (Sarti *et al.*, 2019). Donkey milk exhibits organoleptic characteristics and a chemical composition comparable to human milk (Guo *et al.*, 2007). In terms of its high lactose and low protein content and even lower level of fat percentage, donkey milk is most comparable to human milk (Garhwal *et al.*, 2022). Donkey milk has a lower amount of somatic cells, low microbial level and a total bacterial count which contribute to an extended shelf life and consistent quality.

Halari donkey milk's low fat content ($0.86 \pm 0.04\%$) makes it particularly beneficial for certain consumer groups, like the elderly. The protein content ($2.03 \pm 0.03\%$) was observed to be marginally greater than the protein content of human and mare milk. Treatment and prevention of atherosclerosis have been found to benefit from donkey milk's low fat content and quality in terms of the ratio of saturated to unsaturated fatty acids (Tafaro *et al.*, 2007). Halari donkey milk's is also beneficial for people with obesity (Martini *et al.*, 2015) and cardiovascular diseases (Li *et al.*, 2018). The high concentration of lactose content ($5.75 \pm 0.15\%$) in Halari donkey milk is regarded to be similar to that in human milk, which makes it



favourable for the consumption of children. The high lactose content is responsible for the milk's palatability and aids in the intestinal absorption of calcium, which is necessary for infant bone mineralization (Madhusudan *et al.*, 2017)

The minerals in milk are essential for growth, the development of skeletal structure and many other biological processes. Significant levels of magnesium, sodium, calcium, potassium, phosphorus, and zinc were found in Halari donkey milk, according to mineral testing. An additional factor in the nutritional value of Halari donkey milk is the concentration of various vitamins and amino acids, including valine and isoleucine. Donkey milk is superior to ruminant milk samples as a breast milk substitute for infants due to its low ash concentration ($0.51 \pm 0.05\%$) and lower protein content, which are better suited to infants with limited renal capacity. The energy content of Halari donkey milk was 40.39 ± 0.31 kcal/100 gm and the water activity ranged from 0.973 to 0.975. Titratable acidity was $0.03 \pm 0.01\%$. Halari donkey milk can be considered acceptable and microbiologically safe, having low total plate count and yeast and mould counts (Garhwal *et al.*, 2023).



Kachchi female



Halari female



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