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Camel: A Store House of Medicine

Dr. Parag Acharya

*Assistant Professor, College of Veterinary Science, Rampura Phul,
GADVASU, Ludhiana*

**Corresponding Author: paragacharya17@gmail.com*

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Camels are the most adopted desert dwelling domesticated animals. It's a gift of nature to the people of arid and semi arid region to cope with harsh climate. They possess some special characteristics which help them to survive in the desert and popularly known as 'Ship of the desert'. Camels are found in hot as well as cold deserts. The word camel is derived from greek word 'kremal' which is originally burrowed from Sanskrit word kreluk (throwaway legs). Because when they run, they literally throw away their legs in air. Camel is called 'oont' in hindi and 'ustra' in Persian language. Both these words have been derived from Sanskrit word 'ustra' which means 'over blacked colour'.

There are two kinds of camel in the world i.e. old world camel and new world camel. The present day camels are known as old world camel whereas the new world camel or South American camel constitutes Llama, Alpaca, Vicuna and Guanaco. They all belong to the family camelids, order- Artiodactyla (even toed ungulates) and sub-order Tylopoda. The genus is camelus and it has two species. One species is 'Dromedary camel' or 'one humped' camel which is found in India, Afghanistan, Iran, Arabia and Africa. Other species is 'Bactrian camel' or 'double humped' camel which is seen in Central Asia reaching up to Magnolia to Western part of China. Globally, 89 percent are single humped camels and remaining 11 percent are bactrian camels or two humped camels. Rajasthan and Gujarat are leading states in India with camel population around 80 percent and 8 percent respectively. It is the state animal of Rajasthan since 2014. The Raika community of Rajasthan and Maldharis community of Gujarat are traditional camel keepers.

There are nine breeds of camel found in India i.e. Bikaneri, Jaisalmeri, Jalori, Kutchi, Malvi, Marwari, Mewari, Mewati, Kharai. The Bikaneri has excellent draft capabilities (Baggage type) and is therefore becoming the breed of choice of the farmers of the Thar desert (NW Rajasthan). Jaisalmeri camel has good race potential (Riding type). Camel Corps constitutes an important wing of the Border Security Force of Indian

para-military service. Kutchi breed (Kutch region of Gujarat) and Mewari camel has good milk potential.



(Single humped camel)



(Double humped camel)

Traditionally camels are considered as draft animals used for travelling and trade in desert. They play important role in culture/festival, sports, dance, safari riding. But due to mechanization and adaptation of modern means of agricultural and transportation practices in the desert, the use of camels has been reduced. The present data on camel population is disconcerting. Their population has decreased drastically from 4 lakhs in 2012 to 2.5 lakhs in 2019 in India. But, focus has been renewed now. Camel milk is getting attention due to its nutraceutical and therapeutic property. The milk production has been increased from 12.74 % in 2012 to 17.74 % in 2019. The Food Safety and Standard Authority of India (FSSAI) recognized camel milk as human food since 2014. As compared to cow milk, camel milk has three times more Vitamin – C and higher minerals like iron, zinc, copper, sodium, magnesium, manganese and potassium. The lactose content in camel milk is low and is easily digestible by lactose intolerant people. The lactoferrin in camel milk are helpful in preventing arthritis. Camel milk has beneficial effect on the diseases like autism, diabetes, jaundice, tuberculosis, asthma, piles, anaemia gastrointestinal allergy, cancer, salmonellosis, heavy metal and alcohol induced toxicity and liver diseases. It's a super food for pregnant woman and can be used as alternative food for children who can't digest cow or buffalo milk. In addition to this, camel milk has anti-microbial, antiviral, anti-oxidative, anti-hypertensive and immunomodulatory properties. Due to these health benefits, 'camel dairy' is gaining popularity among people these days. Value addition of camel milk can also be done to prepare flavoured milk, cheese, ghee, ice-cream etc. So, there is need to establish camel as 'store house of medicine' and 'multi - utility animal'.

Peculiarities about camel:

- Camel is considered as a 'Pseudoruminant' because of its three compartments of stomach instead of four like true ruminants. In ruminants like cattle, buffalo, sheep and goat the stomach is four chambered i.e. rumen, reticulum, omasum and abomasum. In camels, the omasum is absent.

- Camels do not have sweat glands and can tolerate heat up to 49 °C to 50 °C during the day time and 30°C during night time.
- When water is available it can drink water up to 30 % of its body weight. It can drink 200 litres of water in 3 minutes.
- The camel could loss water up to 30% of body weight whereas, other mammals may die when they loss water up to 12% of their body weight.
- The hump of the camel is the store house of energy in the form of fat. Camel hump can form up to 20 % of total body weight.
- The camel RBC (Erythrocyte) is oval in shape, small and enucleated. Except camel, RBC of all mammals is concave or spherical in shape.
- Camel RBC can swell up to 240 % of its original volume without bursting, while erythrocyte of most mammals expand up to 150 %.
- It walks on soft padded foot (tylopoda) instead of hooves.
- It has no horns.
- The upper lip splits in two parts, with each part separately mobile.
- Camel has two rows of long eyelashes which are able to open and close to protect from sand storm.
- A hard flat area of skin on stomach and thick leathery patches on knees protect them when resting on hot sand.
- They have single-domain antibodies (also known as nanobodies or VHHs).
- The kidney of camel has strong water reabsorption capacity. Camels eliminate low volume of concentrated urine to retain as much water as possible.
- Camels have extremely large intestine to absorb all the water from the feed they eat and as a result they eliminate dry faeces. They can also store large amount of water in gut.
- Camel can tolerate high blood glucose level (twofold than other ruminants) without showing any signs of diabetes and can withstand high salt level in the diet (8 times more than sheep and cattle).

Conclusion

Globally, arid region occupies more than 35 % of the land. Due to some unique features, camel adopts itself to the harsh and hostile desert ecosystem. At present, camel has established itself as 'multi - utility animal' by producing milk, meat, fibre, dung, bone, skin etc. 'Camel dairy' is gaining importance due to its therapeutic properties and 'camel ecotourism' seems to be a very good revenue generating perspective. Thus, camel keeps the ability to double the farmer's income and can valorise those remote areas of the desert. So, it is very important to conserve these species and special attention must be given to those community or people associated with camels.