

# Management of Camels in Drought Areas

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## ABSTRACT

Camels are well adapted to drought areas because they can survive with less water and poor-quality feed. Proper management includes providing shade, clean drinking water and balanced nutrition during dry seasons. Grazing should be controlled to prevent overuse of scarce pasture resources. Regular health care, vaccination and parasite control are important to keep camels healthy in harsh climates. Good drought management helps improve camel productivity, reproduction and survival in arid regions.

## INTRODUCTION

The camel (commonly called the “ship of the desert”) is highly adapted to arid and semi-arid regions. Proper management during drought conditions is essential to maintain health, productivity, reproduction, and survival. It can thrive on thorny shrubs in desert, where other herbivores starve. There are about 1 million camels in India, mostly concentrated in the northwestern parts - Rajasthan, Haryana, Punjab and Gujarat. They are extensively used for ploughing, carting, riding and water lifting, crushing sugarcane and oil seeds.

Camel is a herbivore like cattle, sheep and goat (Bhakat and Sahani, 2006). Camel's physical and physiological features make it eminently suited to desert conditions. The fine hair on the body of the camel act as an insulation and help it ward off high ambient temperature. Owing to the greater thickness of skin, water loss through evaporation is considerably less in camels. Its hump acts as a store house of fatty tissues, which enable the camel to live long under drought conditions. These factors help camels do away with drinking water for long periods.

## Feeding management of camels

### 1. Feeding during non-working period

When not engaged in work, camels can efficiently survive on natural grazing and browsing of trees, shrubs, bushes, and desert vegetation. They show a marked preference for tall, young, and succulent grasses. To meet the nutritional requirements of their large body size, camels should be allowed to graze and browse for at least 6-8 hours daily. The size and firmness of the hump serve as important indicators of the nutritional status of the animal; a well-developed hump reflects adequate energy reserves and proper nourishment.

During periods of insufficient pasture availability, the diet should be supplemented with green fodder, dry roughages, or concentrate feeds. When shifting from dry to green fodder, special care is needed to prevent overconsumption, as sudden intake of excessive succulent feed may lead to flatulent colic, which can be severe and occasionally fatal. Abrupt dietary changes are commonly associated with digestive disturbances and ill health in camels. Therefore, introduction of any new feedstuff should be carried out gradually by initially mixing small quantities with the previously accustomed ration and progressively increasing its proportion over time. Adequate time should also be provided daily for rumination (cud chewing), which is essential for proper digestion and efficient utilization of feed nutrients.

### 2. Feeding of working camel

Supplementation of grain ration becomes essential in camels subjected to heavy work, particularly when adequate grazing resources are unavailable (Askar *et al.*, 2005). Among concentrate feeds, gram (chickpea) is considered one of the most suitable and nutritious feed ingredients for camels. Grains are preferably offered in crushed form to

improve digestibility and nutrient utilization. In situations where crushing facilities are not available, grains may be soaked in water for a certain period before feeding to facilitate mastication and digestion.

For stall-fed camels performing moderate work, a balanced daily ration may consist of approximately 1 kg crushed gram, 1 kg crushed barley, 9-18 kg green fodder, 7 kg straw, and 28–56 g common salt. This feeding regimen is considered adequate to meet the maintenance and work-related nutrient requirements of the animal. Concentrate feeds should preferably be offered during the evening hours. Feeding grains on an empty stomach or immediately after the camel has quenched prolonged thirst should be avoided, as it may predispose the animal to digestive disturbances. Salt supplementation is essential for maintaining electrolyte balance, appetite, and overall health in camels. It may be supplied in the form of a mineral mixture, mixed with the daily grain ration, or offered separately. When provided alone, salt is generally administered during the early morning hours, whereas salt mixed with concentrate feeds is usually offered in the evening.

### 3. Watering of camel

The water requirement of camels varies depending upon the type of feed consumed, environmental temperature, humidity, and level of physical activity. Under normal management conditions, a camel generally requires approximately 8–36 litres of water per day when watered regularly. However, following prolonged periods of water deprivation, camels are capable of consuming substantially larger quantities of water in a single drinking session.

Normally, camels should be provided access to water once or twice daily, although watering on alternate days is a common practice in arid

and desert regions due to the camel's exceptional adaptation to dehydration. Camels possess an extraordinary water conservation mechanism and a remarkable drinking capacity, enabling them to consume up to 135 litres of water at one time after dehydration.

One of the unique physiological adaptations of camels is the ability of their erythrocytes (red blood cells) to withstand extreme osmotic variation. During rapid rehydration, camel erythrocytes can expand up to nearly 240% of their normal volume without rupture, whereas in most other animals' erythrocyte swelling beyond approximately 130% may result in cell lysis and severe physiological disturbances. This adaptation allows camels to tolerate rapid intake of large quantities of water after prolonged dehydration.

Drinking water provided to camels should be clean, fresh, and free from contamination. Camels generally prefer still or slowly flowing water over rapidly flowing streams. Watering is preferably carried out before feeding and after completion of work or unloading. Camels usually drink slowly and intermittently rather than consuming water continuously at once. However, severely dehydrated animals may occasionally suffer from gastric overdistension if excessive water is consumed too rapidly after prolonged thirst.

### **Work, housing and general management of camels**

Camels are best utilized for riding and pack transport during cooler periods of the day, particularly at night, owing to their greater efficiency and reduced heat stress under lower ambient temperatures. During daytime, movement and marching should preferably be restricted to the early morning and late evening hours. While on long marches, camels should be allowed to graze and browse intermittently, as this practice helps reduce

feed costs and partially meets their nutrient requirements.

During transportation or marching, camels should be halted after every 15–20 km to provide adequate rest and allow urination. This practice is especially important in male camels, as urination requires a comparatively longer duration. During rest periods, loaded camels should be allowed to sit down to relieve fatigue. Upon reaching the destination, the load should be removed gradually, while the saddle may be retained temporarily to avoid sudden release of pressure from the back. Abrupt unloading may lead to vascular congestion, pressure injury, and subsequent sore or gall formation over the dorsal region. Proper loading management is essential, and the weight should always be distributed equally on both sides of the body to maintain balance and prevent musculoskeletal strain.

Similar precautions should also be adopted in the management of riding camels. Camels used for draught purposes such as ploughing, carting, or water lifting should not be subjected to work exceeding 5-6 hours per day in order to prevent exhaustion and excessive physical stress.

Camels should be maintained in simple but well-designed housing systems consisting of open paddocks with shaded enclosures to protect them from extreme solar radiation, rain, and adverse climatic conditions. In organized systems such as military establishments, properly arranged camel lines and management facilities are necessary for efficient handling and maintenance.

During the rutting season, male camels often become aggressive and difficult to manage; therefore, males should be housed separately from females during this period to minimize injuries and behavioural disturbances. Camels are generally controlled using a wooden nose peg attached to a rope made from hemp or a

mixture of goat and camel hair, which allows safe handling of the animal.

Routine grooming and cleaning are essential management practices for maintaining hygiene and preventing skin diseases and ectoparasitic infestations. Properly designed saddles and harnesses should be used to minimize pressure sores, gall formation, and back injuries. Draught camels employed for ploughing require specially designed yokes suitable for their body structure and working conditions.

Camels should ideally be provided an annual period of rest, preferably during the rainy season, when good-quality grazing and browsing resources are abundantly available. This rest period helps improve body condition and restore working efficiency.

In regions with severe winters, camels develop a thick hairy coat that generally requires clipping during spring. Camel hair is an important raw material used in the manufacture of blankets, carpets, ropes, and warm garments. The finest quality hair is usually obtained from young camels. In regions such as Punjab, camels clipped during March or April yield approximately 0.90–1.35 kg of hair, whereas animals maintained in colder regions may produce up to 1.4 kg.

Camel calves are generally not clipped until the onset of the monsoon season in order to protect them from hot desert winds. Following clipping, animals should be covered during nighttime to prevent exposure to cold stress. In hotter climatic regions, camels usually do not develop long hair coats, and clipping may therefore be unnecessary. After clipping, the body of the camel is traditionally smeared with mustard oil or farmira oil, followed approximately 48 hours later by application of a layer of mud over the body surface. The mud coating is allowed to remain for several days until it naturally dries and sloughs off. This traditional management practice is considered

beneficial in reducing ectoparasitic infestation and maintaining skin health.

## CONCLUSION

Camels are highly adapted animals capable of surviving and performing efficiently under harsh desert and drought conditions due to their unique anatomical and physiological characteristics. Proper management of feeding, watering, housing, and work schedules is essential for maintaining their health, productivity, and working efficiency. Balanced nutrition, gradual dietary changes, adequate mineral supplementation, and proper watering practices play a vital role in preventing digestive and metabolic disorders. Appropriate management during work, transportation, and rutting season helps minimize stress, injuries, and exhaustion in camels. Regular grooming, suitable housing, and proper saddle and harness management are also important for maintaining hygiene and preventing skin and back problems. Seasonal care practices such as clipping, resting during rainy seasons, and traditional parasite control measures further contribute to the welfare and longevity of camels. Thus, scientific management of camels is essential for sustainable utilization of this valuable desert livestock species in arid and semi-arid regions.

## REFERENCES

- Askar, A.R., Saber, A.R., Allam, S., Kewan, K.Z., Bakr, M.H., Fayed, F., Kandil, H.M., Ragab, S.A., Hussien, B.A., Ezz, S.S.A.E. and Shoukry, M.M., 2025. Effects of concentrate supplement on camel performance, forage utilization, and energy usage in arid-area rangelands. *BMC Veterinary Research*, 21(1), p.387.
- Bhakat, C. and Sahani, M.S., 2001. Impact of camel production system on the sustainability of marginal farmers in hot arid villages of Thar desert. *Indian Journal of Animal Research*. 35(1): 10-14.