

## NUTRITIONAL AND MANAGERIAL PRACTICES OF ANIMALS IN ANCIENT INDIA

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### IMPORTANCE OF ANIMALS IN ANCIENT INDIA

Ancient India has provided the most concrete identification of the art of feeding and management of animals for the economic benefit of man. In the Vedic period the chief occupation of the people was cattle raising and village economy was practiced. Cattle were most prized possessions and religion became closely associated with animals; hence cow became sacred.<sup>1</sup> Apart from treatment of animals, some information on animal husbandry is also available. According to *Matsya Purāna*, *Manu*, *Āpastamba* and *Parāśara Samhitās*, and Kauṭilya's *Arthaśāstra*, drastic and severe punishments were ordained for cruelty to animals. Great authors like Atri, Parāśara, Gautama framed definite rules for cattle in ploughs. In *Agni Purāna*, we find that Kings were envisaged to preserve the cattle of the country. The *Arthaśāstra* mentions a government officer called Superintendent of Cattle and Horses whose exclusive duties were to supervise livestock in the country. The superintendent was expected to maintain cattle census. A systematic record was maintained under the following classifications: male calves, steers, tamable cows, oxen, bulls, cattle (fit for slaughter) buffaloes, female calves, heifers, pregnant cows, milch cows, barren cattle, etc. Under the fear of cattle lifters, the animals were kept in the care of the superintendent, giving him one-tenth of the dairy produce.<sup>2</sup>

All the historians are agreed that when the early Aryans settled down in India, they settled as agriculturists and they appreciated the importance of cattle. In fact, the cattle formed their wealth. Thus, the main interest in the cow formed a basis for the development of socio-economic life in India, which forms the structural backbone of Indian society.

### DAIRY FARMING

Every village had its own pasture lands. Common rights in pasture were recognised by states in *Arthaśāstra*. Uncultivated land was developed into pastures. In *Manu Samhitā*, land adjoining villages was reserved for pasture, where cattle were allowed to graze freely. There were professional herdsmen who took animals

for grazing in the morning and brought them back in the evening. In *Arthasāstra* it is suggested that cattle should be grouped in herds of 10 of similar colour. The herdsmen were expected to have full knowledge of common ailments and remedies. In case of death of an animal a herdsman should surrender to the owner the skin, fat, bile, marrow, teeth, hoof, horns and bones of the dead animal. According to Manu, for maintaining 100 cows, one heifer per year shall be given to herdsman as wages and for 200 milch cows, he shall be allowed to milk all animals once every 8 days as wages.<sup>2</sup>

#### *Fodder for animals :*

Cultivated lands were available for grazing after crops had been harvested. The weeds, plants, stumps of crops, and grass constituted fodders. The cultivation of fodder crops and their conversion into silage was known to the ancient Indians. References to this exist in *Rgveda*. Nutritive value of standard milk is also described, one *drona* of cows milk was known to yield one *prastha* of butter, one-seventh *prastha* more in buffalo milk. In *Arthasāstra* it is reported that yield of milk and butter depends upon the nature of feed, soil and the quality of fodders. It is advocated that to increase the yield of milk, the cow should be given a few morsels composed of several sticks of *asvaganthā* and sesame. Kālidāsa, in his *Raghuvamśam śloka* 73, says that a piece of rock salt should always be kept in stable for horses and this is being practiced even to-day.<sup>2</sup>

#### *Dedication of bulls :*

Dedication of bulls for breeding purpose was a great ceremony and was performed under well laid-down rules and regulations. The criteria for selection of the animal for such purpose, as mentioned in *Viṣṇu Purāṇa*, are that the bull should be (i) offspring of a heavy milker, with young ones living, (ii) not deficient in any limb, and (iii) capable of protecting the whole herd. According to *Matsya Purāṇa* the bull should have elevated shoulders, big hump, soft and straight tail, tender cheeks, broad back, shining eyes, sharp horns and an excellent switch of tail. It must be well built with roar like thunder, high stature and a graceful walk. In *Mahābhārata*, cattle census and pedigree registers are also described. All these clearly show that ancient Indians were very particular about selection of bulls used to multiply the progeny. Apart from these, there is clear evidence about the science of genetics, conception, inheritance, antenatal and postnatal care of animals.<sup>2,3</sup>

### LIVESTOCK FEEDING

#### *Feeding of Bulls :*

The manner in which the stock was fed was most important. The feeding depended upon breed and was done with definite rules. For bulls and horses in speed and working capacity, half a *bhāra* (maund) of meadow grass, one *bhāra*

ordinary grass, one *tulā* (100 *palas*) oil cake, ten *ādḥakas* bran, five *palas* salt, one *kudumba* oil for rubbing over the nose, one *drona* of barley or cooked black gram, one *drona* of milk, half *ādḥaka surā* (liquor), one *prastha* oil/ghee, ten *palas* sugar and one *palas* fruit stringibera are recommended. In general three-fourth of all the above would form the food for mules, cows, and asses, and twice the quantity for buffaloes and camels.<sup>2, 3</sup>

#### *Rations for Cattle :*

Rations were provided on generous scale. The draught oxen and cows in milk were to be provided with food according to work load, and quantity of milk produced. All cattle should be provided with abundance of fodder and water. For bullocks, one *drona* of *māṣa* (*Phaseolus radiatus*) or cooked barley alongwith other things prescribed for horses are the requisite quantity besides the additional provision of one *tulā* oil cake or ten *ādḥakas* of bran.<sup>3</sup>

#### *Rations for Elephants :*

It is well documented that in Mauryan times 'The victory of kings in battles depended upon elephants'.<sup>4</sup> Several elephant forests were preserved and their killing was prohibited. The daily life and rations of the elephants were as follows :

#### *Daily life :*

The first and the seventh of the eight divisions of the day were bathing times ; the time subsequent to these periods was for food ; forenoon was the time for exercise ; afternoon was the time for rest ; two (out of eight) parts of the night were the time for sleep ; one third of the night was spent in wakeful rest. Rations were according to size and class. Considering the size, the elephants were divided into seven or nine *aratnis* in length, and ten *aratnis* in circumference. Forty years old elephant was considered the best. That which was thirty years old was middle class and that twenty five years was the lowest class. The diets for middle and lowest class elephants were to be lessened by one quarter according to the class.<sup>3</sup>

#### *Rations :*

The rations for an elephant (7 *aratnis* height) composed of one *drona* grain, half *ādḥaka* oil, three *prasthas* ghee, ten *palas* salt, five *palas* flesh, one *ādḥaka* broth or two *ādḥakas* curd ; in order to make it palatable ten *palas* sugar, one *ādḥaka surā* or two *ādḥaka* milk ; one *prastha* oil for smearing over body, one-eight *prastha* for head ; two *bhāras* of meadow grass, two and three quarter *bhāras* of ordinary grass (*śaṣpa*) and two and half *bhāras* of dry gram and *ad lib* quantity of stalks of various pulses. An elephant in rut would be provided more. The rest of the elephants were to be provided with ration proportional to their size. The young elephant (*bikka*) captured for the mere purpose of sporting was to be fed with milk and meadow grass.<sup>4</sup>

*Rations for Horses :*

For the best horse, the diet shall be two *dronas* of any one of the grain (rice, barley, panic seeds soaked/cooked, mung), one *prastha* oil, five *palas* salt, fifty *palas* flesh, one *ādhaka* broth or two *ādhakas* curd, five *palas* sugar and to make the food relishing, one *prastha surā* (liquor) or two *prasthas* milk. The same quantity of drink shall be given to those who are tired after long journey. The horses also shall be given enema with one *prastha* oil, and one *kudumba* oil shall be rubbed on nose. Each horse shall be given one thousand *palas* of meadow grass, two thousand *palas* of ordinary grass and *ad lib* hay and stalks of crops like pulses.<sup>4</sup>

*A Draught Horse :*

A medium size draught horse shall be given the same quantity as a medium size horse. A steed shall be given one-quarter less ration. Half the ration will be given to a colt.

*Rationing under Special Conditions :*

A steed that has just given birth to a colt shall be provided for the first three days with a drink of one *prastha* clarified butter ; afterwards it shall be fed with one *prasthan* flour (*saktu*) and made to drink oil with medicine for ten nights. After that time it shall have cooked grains, meadow grass, and other things suited to the seasons.

*Colt feeding :*

A ten days old colt shall be given one *kudumba* of flour mixed with one-quarter *kudumba* clarified butter and one *prastha* milk, till it becomes six months old. Then the above ration shall be increased half as much during each succeeding month, with the addition of one *prastha* of barley till it becomes three years old, then one *drona* of barley till it is four years old. At the age of five years it will attain its full development and become serviceable.

## MANAGERIAL PRACTICES AND USE OF ANIMALS IN AGRICULTURE

Horses could be used for ploughing. But horses were not fit to draw ploughs in muddy soil and this probably rendered them unfit for Indian agriculture and oxen took their place. In *Rgveda* we find reference about use of horses, bullocks and buffalo bulls as beasts of burden. Their use in battles and religious functions is well documented. In *Kṛṣisaṃgraha* are mentioned specific rules for construction of stables, cow sheds, employment of cattle in work, sanitation, etc. (i) A cattle shed should be 55 cubits square and the direction of the sun should be taken into consideration. (ii) One who makes a cattle shed strong and keeps it clean from dung secures healthy growth of animals. (iii) Goats should never be kept in a cow

shed. (iv) Cotton, husk, hot stearin, broomsticks, pestle and stale food should never be kept in cow shed. (v) Cow shed should be frequently fumigated with powder of deodar, asafoetida and mustard seeds. (vi) An asafoetida tree planted near a cattle shed improves sanitation.<sup>5,6</sup>

#### *Rules for Plough of Cattle :*

Hungry, thirsty, tired, deformed, or diseased cattle should never be yoked. When the plough oxen are eight strong for a plough, they should be worked for the whole day ; when four strong, they should not be worked for more than half a day ; if only two, they should be worked for quarter of a day. This is also suggested by authors like Atri and Parāśara.<sup>5</sup>

#### *Other Practices :*

Nursing of new born and its mother is also mentioned in ancient literature. The foetus shall be washed as soon as it comes out. The udder of the mother is also washed and the young one is allowed to suck. If the young remains attached to the uterus, treatment for the expulsion of foetus and placenta may be given. The treatment comprised *sidhu* two seer, *trikatu* half paw and honey half seer. Food should be given after parturition. Because of the parturition, the abdominal cavity of a mare gets disturbed, hence it should be given half seer ghee together with fresh food like barley, dhoob grass, and *kulthi*. Mare and foal should be bathed on the tenth day. The colt shall be given a mixture of fresh butter and honey to lick till it is one month old. (Honey 250 g and butter 50 g). The feed consists of washed wheat, honey, and ghee.

In Vedic age, people had no objection to eating beef. In the epic period also, beef and buffalo meat were freely used by people.<sup>6</sup>

The literature on animal husbandry in ancient India is vast and useful. Certain practices are even being followed to-day. A critical study will further enhance the improvements in feeding, managerial and nutritional practices.

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