



THE TECHNOLOGY OF FEEDING CAMELS AND HORSES

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INTRODUCTION

Camel is a universal agricultural animal with many versatile features that are beneficial to humans. Over the centuries, its place in the socio-economic sphere has changed in line with lifestyle changes. Since the beginning of the twentieth century, due to the mechanization of industries, the role of camels in the economic and transport sectors of the republic began to decline. The development of civilization has weakened the importance of camels as a productive animal in desert and semi-desert areas, where the population has been consuming camel meat and milk (shubat) as food since ancient times.

The development of camels in the economy of the Republic is closely linked with the study of the chemical

composition and nutritional value of natural pastures. A detailed study of the above issues will ensure the organization of a complete and balanced feeding of animals according to the seasons.

RESULTS OF THE EXPERIMENT

Feeding camels. In the desert pastures, mainly xerophytes, i.e. plants adapted to dry and hot summer conditions, grow. Camels get most of their food from natural pastures. In the desert, the following plants grow: saltbush, saxaul, yantak (camel thorn), needle grass, white wormwood, desert bushes, horny plants etc., from which camels were fed regularly (Table 1).

Table-1
Feeding norm for unused camels (per feed unit)

Keeping condition	Living weight of camels, kg									
	400	450	500	550	600	650	700	750	800	850
In hot days	3,6	3,9	4,2	4,5	4,8	5,1	5,4	5,7	6,0	6,4
For getting 1liter of milk	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8
In winter	5,8	6,4	6,8	7,2	7,5	7,9	8,2	8,5	8,8	9,1
For getting 1liter of milk	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8

When feeding horses, from concentrates: hay, oats, barley bran are used. If there is a lack of calcium in the diet, the boron is added to concentrate foods 20-30 g per animal. Young foals are fed 4 times a day; the concentrate feeding is given in the morning, lunch and evening. Hay should be given 3 times a day, fructose foods 2 times a day. The basic ration of young and weak-born foals is supplemented with 3-8 liters of skimmed milk or cow's milk mixed with hot water per day at the expense of each animal. At the same time, 20-25 g of sugar is added per liter of milk.

Feeding of camels was carried out taking into account their level of obesity. In the ration of lean camels, additional

feed was given in order to restore their live weight and level of obesity.

During the winter, camels were kept in special pens for 40-50 animals, and they were given 2-4 kg of additional mixed fodder depending on their weight. Depending on the average daily amount of feed and live weight of camels, 16-18 kg of roughage is given. Because camels have the ability to pick up nutrient-rich plants from pasture plants, they were considered to consume moderate amounts of nutrients not only in terms of overall nutrition but also in terms of nutrient content. Camels spend less time grazing in the pasture. In summer, camels graze for 8-9 hours. During this period, as a

result of consuming a variety of different grasses in the pasture, it fully satisfies the body's need for food. This was 6-7 kg per feed unit.

In our experiment, as a result of overgrazing in the pasture conditions in order to get the product from the camels, no additional feeding was envisaged due to the good nutrient content in the pasture. When there was a shortage of fodder in the pastures, 2-4 kg of mixed fodder was given, depending on the yield. Spring, summer, autumn and winter were also used properly. During the winter, used camels and unused camels were fed 3 times a day in specially equipped barns. The amount and quality of food in the ration of camels had to be taken into account, depending on their live weight and direction, as well as the amount of feed per day.

In addition to the ration of camels working in constant and heavy work, strong fodder, barley, wheat bran were given. Strong forages were given not only in winter but also in summer (if the amount of forage in the pasture did not meet the forage demand of the camels).

Feeding rates for unused camels (per feed unit) are given in Table 1.

The nutrient ration of camels with an average live weight of 500 kg was at least 6.8 feed units in winter. At least 0.8 feed units, 60-75 g of digestible protein, 7.2 g of calcium and 10 g of phosphorus were used to produce 1 l of milk from lactating camels.

One of the peculiarities of camels is that they are demanding on salt. The demand of camels for salt depends on

the amount of salt. Like other agricultural animals, camels were also given salt. For each camel coarse-grained salt was given 100 g per day.

The water demand of camels depends on the season of the year, the feed they consume, camels consume 1.7-1.8 l of water per 1 kg of dry matter. A camel drinks an average of 30 liters of water a day and this has been done.

In the spring, camels drink less water because they feed on green grass. In summer water should be given 2-3 times a day, in autumn once a day.

Camels differ greatly in body composition compared to other agricultural animals. When studying their exterior and constitution, one of the most important structures of camels is the presence of one or two fat humps on the body, so the camels' backs are not flat due to their profile. Compared to horses and cattle, the body is short, the legs are long, the thighs are free and in good motion, and the pelvis and muscles of the hind legs are less well developed than in horses.

The shortness of the body, the length of the neck, the strength is due to the mobility as much as possible. The center of gravity of the neck is strongly developed in camels, i.e. the development of the neck in camels is directed forward compared to the center of gravity of the neck in horses and cattle.

The weight of the front part of the camel's body is 10: 5 comparing to the weight of the next part, and in horses it is 10: 7; in cattle at a ratio of 10: 8.



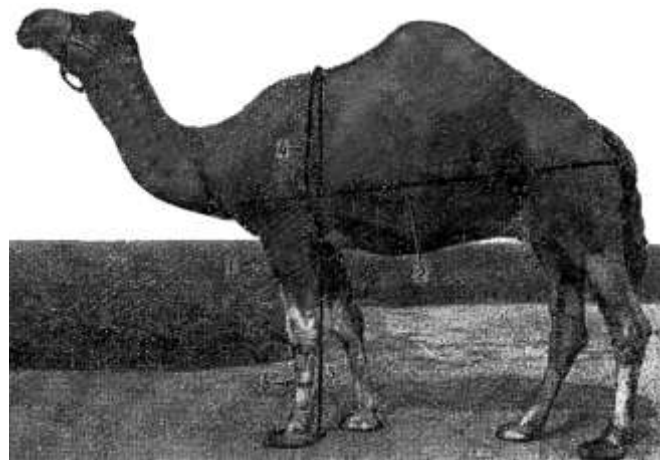
Picture 1. Body dimensions of a camel



Picture 2. Body structure of a horse

To measure camels, a measuring stick (lidtin), a measuring compass (vilkena compass) and a tape measure (measuring tape) are made of a special material. The body

dimensions of one humped dromedary Turkmen arvana camels are given in Picture 3.



Picture 3. 1. The height of the gorge. 2. Slope length of the body. 3. The posterior circumference of the chest. 4. Palm circle.

The body dimensions of two humped Bactrian camels are given in Picture 4.

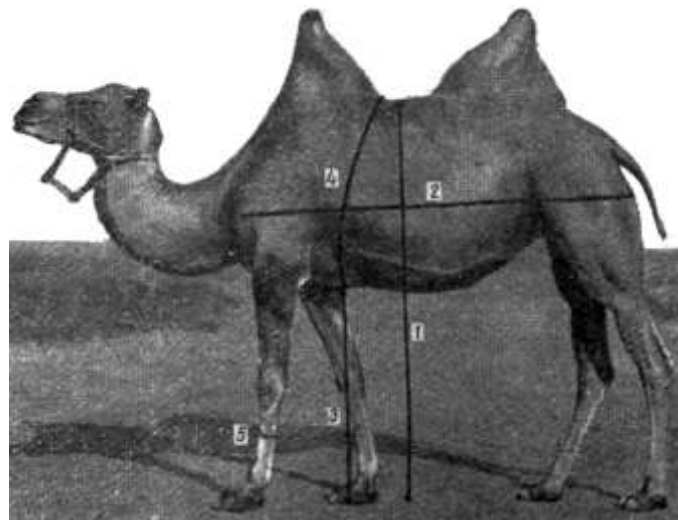


Figure 4. Body dimensions of two humped Bactrian camels.

1. The height of the gorge. 2. Slope length of the body. 3. The posterior circumference of the chest. 4. Palm circle.

The height of the gorge is one of the most important dimensions, which indicates the height of the camel, and the sloping length of the body indicates its speed and productivity.

The posterior circumference of the chest indicates the development of the camel, the weight of the live weight, and palm circle indicates its bones.

Through the palm circle, they determine how well the bones have developed.

The movement of the camels is called alyur, which consists of the following;

Step by step; big steps; crawling; jogging

In camels, the body is short and cannot jump well, i.e. it walks diagonally.

When camels walk, the movement of their legs is not the same. When one part of the limbs is raised, the other part is on the other side. The third leg leans on the ground and the fourth leg tries to lift by leaning.

In camels, the acceleration of the steps is accompanied by crawling, in which the pair's front and back legs move simultaneously in one direction.

The running movement of the camels begins with the next leg.

At the same time behind it, the other front legs move diagonally.

In horses, the normally placed foot is erect and parallel to each other. This is normal for all types of horses. The placement of the hind legs depends on the width of the horse's body, i.e. the bridle. Normally, the hind legs are parallel and wide when viewed from behind, and the forelegs should not be visible from them (Pic. 5).



Picture 5. The body width of a horse.



In the areas adjacent to the Kyzylkum oasis, camels feed on saxaul, tetir, kuireuk, biyurgun and wormwood in winter. In the spring, the sands are covered with ephemeral plants that use spring moisture and grow quickly. At this time, the camels are well fed and regain their fatness. During this period, camels eat ilaq, kartyg, epelek and other grasses. In May, the ephemerals dry up. They are replaced by xerophytes — plants with strong root systems. The main food for camels in both summer and winter: salsola and wormwood - plants that are rarely consumed by other animals due to their specific taste (cherkez, buckwheat, chogan, sora, saxaul, biyurgun and wormwood, etc.).

The need of camels for food. The living conditions of the camel in the desert helped to develop the specificity of metabolism and the economical consumption of feed energy. In this case, the researchers used local breeds of Turkmen horses and individual camels to compare the conditions familiar to both animals. This excellent quality of camels is useful for carrying loads in impassable areas of sand, pastures.

When making rations for non-functioning camels, their fatness should be taken into account. Table 2 shows the calculated feeding norms for camels of normal fatness.

Table 2
Average feeding rates of camels
(kg per feed unit)

Storage condition	Living weight of camels (kg)						
	400	450	500	550	600	650	700
At average temperature	3,4	3,7	4,0	4,2	4,5	4,7	5,0
At cold temperature	5,5	6,0	6,5	6,9	7,3	7,7	8,1

When feeding low-fed camels, more feed should be given by calculating the expenditure to keep it healthy. The diet should include salt. Water is given for them twice a day in summer and once in winter. Camels stop growing when they are 7 years old. Camels give birth to a calf every two years. The camel produces milk for 18 months. In the cold season, camels are kept separate from their mothers in warm rooms and are allowed to be fed up to 5-6 times a day. In places where winters are harsh, camels are kept in backyard barns. The vast pastures of the Karakalpak part of Ustyurt serve as a good fodder base for camels in summer and autumn, while bamboo pastures are used by camels in early spring, late autumn and winter, meaning that this branch of animal

husbandry is mainly based on year-round pasture maintenance.

Studies show that wormwood, wormwood, wormwood-salsola and ephemeroïd-wormwood plants predominate in the Ustyurt desert pastures, with an average yield of 4-10 kg / ha. 1 kg of dry weight contains 0.4-0.5 nutrient units and 110-120 g of digestible protein. Camels with a live weight of 500-600 kg eat an average of 25-30 kg of green grass (10-16 kg of hay) per day, i.e. receive 7 feed units and 520 g of digestible protein. It should be noted that the biological properties of camels allow better use of grasses of desert and semi-desert pastures than other farm animals. Table 3 summarizes the data characterizing the consumption of various pasture plants by camels (Table 3).

Table 3
Consumption of pasture grass by camels by seasons (annual consumption,%)

Plant types	Spring	Summer	Autumn	Winter	During the year
Salty	3	5	11	11	30
Legumes	5	7	1	2	15
Grain crops	3	1	1	-	5
Others	22	20	7	1	50
Total	33	33	20	14	100

The data in Table 3 show that spring and summer animals receive up to 33% of their annual consumption from pasture. In the autumn, the figure drops to 20%, and in winter to 14%.

Thus, the analysis of the seasonal condition of pasture grasses shows that it has a high nutritional value in the spring and autumn periods. Nutrients in these seasons fully meet the needs of camels. But in late autumn and winter it is necessary to arrange additional feeding with concentrated feed.

Today, in the field of camel breeding, as in other livestock industries, there is a comprehensive use of productive qualities. Therefore, intensification of camel breeding can be done only on the basis of organizing rational, complete feeding. To successfully perform this task, it is necessary to be able to assess the nutritional value of fodder, to know the nutritional needs of animals, to master the principles of standardized feeding as the most rational way of using feed.

An animal needs a certain amount of energy, nutrients and biologically active substances to sustain life,



form new body tissues, produce products, and maintain good health.

Nutritional norms depend on the amount of nutrients and biologically active substances that meet the needs of camels for life, work, production, reproduction and health under the conditions provided for in the production technology.

Depending on the direction of economic use, age and physiological condition (growth, foaling, lactation, etc.), the nutritional needs of animals may change. They are not the same in animals of different ages and genders. Thus, in a growing organism, synthesis processes take precedence over decomposition processes, so an adult animal needs more protein per kilogram of live weight.

The developed nutrition standards take into account modern knowledge about the benefits of nutrition and ensure the further enhancement of the genetic potential of productivity, high-quality products with economical consumption of fodder. The daily feeding rates of the camels are given in Table 4 depending on their gender and physiological condition.

In general, it is important to measure body dimensions in cm in order to know the characteristics of the pedigree in feeding, to know the growth and development, to differentiate between breeds, especially in camels breeding to determine the live weight of camels, body dimensions of one humped dromedary and two humped Bactrian camels and to determine it on a scientific basis.

Table 4
Daily feeding rates depending on the gender and physiological condition of the camels

Indicators	Male camels		Female camels		
	Working and before working periods	No working	No working	On the 9 th month	In the period of lactation
Dry matter on 100 kg of live weight	1,8	1,6	1,6	1,8	2,15
Requires 1 kg of dry matter					
Feed units, kg.	0,6	0,53	0,53	0,6	0,72
Changing energy MJ	6,27	5,58	5,58	6,27	7,35
Digestible protein, g.	72	65	65	72	76

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