



## Effect of Khashaki Beetroot on Milk Production of Cows

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**Abstract:** Khashaki beetroot is important in animal husbandry, in the diet of livestock, especially dairy cattle. Beetroot is the best winter feed for all animals, especially dairy cows and young cattle. Dairy cows on rations without fodder beets cannot get high production in the winter. Beetroot is the best food that drives milk from the cow's body.

**Keywords:** Carbohydrate, nitrogen, mineral salts, vitamins, dairy cow, mixed feed, ration, feed, dry matter, milk, protein and sugar.

In recent years, the Republic of Uzbekistan has been paying a lot of attention to the livestock sector. One of the important tasks that is to further develop livestock, increase the productivity of farm livestock, and significantly increase the production volume of livestock goods. For this purpose, it is important to create a solid feed base in the field, to increase the amount of feed produced from each hectare of land depending on the soil and climatic conditions. During the implementation of agricultural reforms that many farms such as livestock farms, were established on the irrigated lands of the Republic. In all regions, shops for the sale of soft fodder for livestock have been established. This makes it possible to meet the demand of strong feed for private, farmer and farm animals. However, it is important to meet the needs of livestock for juicy feed.

In the share of the gross agricultural products of the republic, the livestock sector is also occupied a special place, and it is of great importance to providing the people with valuable food products including protein. Due to this, one of the important tasks is to further develop animal husbandry, increase the productivity of agricultural animals, and significantly increase the production volume of livestock products. For this, it is important to create a solid feed base in the field, to provide cattle with full-value nutrition.

Khashaki beetroot is important fodder to agriculture livestock. In fact while the farm is specialized to dairy products this is the high efficiency feed for cows, because it is characterized by a large amount of carbohydrates. Its nutritional value is determined by the carbohydrates, nitrogen-free extractives, mineral salts and vitamins. Beetroot is one of the main succulent feeds in livestock farming in the autumn-winter season. In addition, by adding kashaki beets to the ration of livestock, their digestion of coarse and concentrated feed is improved. Khashaki beetroot is also important in increasing the milk yield of dairy cows (S.P.Stupin, 2003). So, kashaki beetroots are very important in improving milk production in cattle.

Kashaki beetroot is the best winter food for all dairy cows, especially dairy cows and young cattle. Dairy cows on rations without fodder beets cannot get high production during on the winter. Beetroot is the best food that drives milk from the cow's body (Khokhrin, Yuldashev 2022).

Kashaki beetroots are behind potatoes and sugar beets in terms of nutrients and have an average of 12% dry matter. Sparsely planted fodder beets with large, well-rooted roots lag behind thickly planted averages in terms of dry matter and nutrients. The dry matter of kashaki beetroot is mainly composed of carbohydrates, and the main part of it is sugar and pectin substances. The amount of fiber barely reaches 1% of its weight (Table 1). Kashaki beetroot dry matter is well digested by livestock. On average, 87% of organic substances and 90-95% of nitrogen-free extractives of beet are digested by ruminants.

**Table -1 Composition and nutrition of khashaki and sugar beetroot.**

Indicators	Beetroot		
	Khashaki beetroot	Sugar beetroot	Dried
1	2	3	4
EOB	0,15	0,29	1,01
Exchange energy, For cattle and horses	1,65	2,84	10,14
To sheep and goats	1,6	3,05	-
Dry matter, g	120	230	900
Crude protein, g	13	16	79
Cleavable protein, g	12	15	27
Integral protein, g	1	1	3
Digestible protein, g	9	7	54
Crude oil, g	1	2	4
Raw fiber, g	9	14	93
NDK, g	40	62	43
AEM, g	87	188	660
Starch, g	3	6	22
Sugar, g	40	120	240
Amino acids, g			
Lysine	0,4	0,5	2,7
Methionine+cystine	0,2	0,2	0,8
Macroelements, g			
calcium	0,8	0,5	4
phosphorus	0,5	0,5	4,7
magnesium	0,2	0,4	3,8
potassium	4	2,6	36,4
sodium	1,3	1,3	11,6
chlorine	1,1	2	10,3
sulfur	0,2	0,3	20,1
Microelements, mg			
iron	8	31	144
copper	1,9	2,3	17,3
zinc	3,3	7,1	29,7
margenets	11,1	21,5	103
cobalt	0,1	0,02	0,94
iodine	0,01	0,17	0,08
Carotene, mg	0,1	0,2	350
Vitamins, mg			
E	0,7	0,4	42
B <sub>1</sub>	0,1	0,2	3,5
B <sub>2</sub>	0,3	0,5	3
B <sub>3</sub>	1,2	1,4	13
B <sub>4</sub>	330	300	2500
B <sub>5</sub>	1,8	3,8	18
B <sub>6</sub>	0,2	0,4	21,2

Our researches were carried out on the farm "Saman samo" farm in Kibray district, Tashkent region and on the gray soil land belonging to this farm.

The research subjects are "Uzbekistan-83" variety of khashaki beetroot and "Saman-Samo" farm's dairy cows of black white breed.

in this study used several research ways which were general agrotechnical, veterinary and zoo

veterinary methods.

Scientific experiments to determine the results of the use of khashaki beetroots in the diet of dairy cows were studied during the winter period, that is, from December 1 to January 31, for 90 days.

Before the start of the experiments, the ration of the farm for the winter period was studied and fully analyzed. As can be seen from Table 2, the daily ration of dairy cows in the farm for winter feeding and production includes 4 kg of spring wheat straw for 1 cow, 6 kg of hay of various grasses, 15 kg of corn silage, 10 alfalfa hay, 6 kg of beets and 2 kg of wheat groats and 0.4 kg of cotton wool. The farm ration had a nutritional value of 17.4 energy units (EUB), 9.9 MJ of energy, 128 g of crude protein, 42.1 g of sugar, 8.4 g of calcium and 2.3 g of phosphorus in 1 EOU. As a result of the analysis, it was found that the share of coarse feeds in the farm ration is 35.6%, the share of succulents is 49.8%, and the share of strong feeds is 14.9%. As we can see, this ration meets the requirements only in terms of satiety, but does not meet the rest of the indicators. Among them, the ratio of only one protein to sugar was 1:0.3.

For conducting experiments, a special ration was created for dairy cows, in which the share of coarse feed in the farm ration was reduced from 35.6% to 27.8% or 22%, and the share of succulents from 49.8% to 48.2% or 2.4%. In order to provide enough energy to productive dairy cows in the first period of lactation, the percentage of strong feed was increased from 14.9% to 24% or 61%. The amount of feed beet was increased from 6 kg to 8 kg.

As a result, the daily ration of cows was 18.1 EOB, 1 EOB contained 10.09 MJ of energy, 127 g of crude protein, 56.8 g of sugar, 7.4 g of calcium and 2.7 g of phosphorus, and it was achieved that the ration meets the requirements with most indicators.

**Table – 2. Ration of control and experimental groups**

Indicators	Rations		Difference
	Control (farms)	Experiment	
1	2	3	4
The amount of nutrients in the daily ration, kg			
Spring wheat straw	4	3	-1
Various grass hay	6	5	-1
Corn silage	15	15	
Alfalfa hay	10	8	-2
Beetroot	6	12	+6
Barley groats	2	3	+1
Cottonseed meal	0,4	1,0	+0,6
The ration contains:			
			Dairy cow demand *
EOB	17,4	18,0	18,1
Exchange energy,	172,5	179,37	180,5
Dry matter, g	19572,0	19075	18100
Crude protein, g:	2150,6	2194	2002,5
Crude oil, g	1027,6	802	540
Raw fiber, g	3061,0	2824	4150
Starch, g	568,0	1091	1435
Sugars, g	731,6	1021	1555
Amino acids, g:			
Lysine	111,2	109,9	99
Methionine+cystine	83,7	83,7	50
Macroelements, g:			
Calcium	146,3	132,4	118
Phosphorus	40,2	48,8	79
Magnesium	20,0	32,7	28

potassium	243,5	249,2	117
Sulfur	30,6	31,8	37
Macroelements, mg:			
iron	6312,2	5509	1270
Copper	125,0	133,1	150
Zinc	445,4	458,7	992,5
Manganese	892,6	815,2	712,5
Cobalt	5,8	5,85	11,5
Iodine	6,3	5,83	13,5
Carotene, mg	782,0	688,7	712,5
Vitamins, mg	0,0	0	
D, ME	3280,0	2790	1500
E,	1156,2	1148,4	630

Based on the possibility of the farm, in the experimental ration, negative conditions in meeting the requirements of cows with nutritious and mineral substances observed in the farm ration were reduced. As a result of changes made to the diet, the energy supply of dairy cows in the diet was left at the standard level. In this case, the shares of sources of energy were revised and increased at the expense of reduction of other nutrients. In this way, one of the main goals was to increase the protein-sugar balance from 1:0.3 to 1:0.5, or to improve it by 60%..

### References

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