



## Feed Biotechnology in the Cultivation of Bees Queens Artificially

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### ABSTRACT

In the Bukhara region, it is important to feed the bee colony with natural, vitamin-rich feed that accelerates the development of the colony, in addition to accelerating the development of the colony, for the artificial breeding of queen bees in early spring if there is no pollen. Natural nutrients have a positive effect on the development of the bee family and create a solid basis for the artificial breeding of queen bees.

### Keywords:

Natural nutrients, sugar juice, sweet corn juice, wheatgrass juice, breeding of bees, control group, experimental group, queen bees, artificial breeding of bees, larvae, zootechnical indicators

Extremely hot and changeable climatic conditions in Bukhara region significantly slow down the flight activity of bees and the accumulation of honey, and the sharp warming of the air and the occasional heavy rainfall completely stop the secretion of sap from plants. It is during this period that the development process of the bee family stops, the queen bees lay eggs. As a result, the number of young bees in the family decreases.

Feeding the bee family with natural vitamin-rich foods rich in protein, which accelerates family development, is also important in ensuring the growth and development of the bee family in order to artificially breed the mother bees during the period when the bees do not pollinate in early spring. It is known that these natural nutrients have a positive effect on the development of the bee family and provide a solid foundation for the artificial breeding of mother bees. [2]

For this purpose, in order to develop a family of bees in the early spring of 2019 in the Bukhara region and artificially breed mother bees, wheat grass water was used to supplement the bees with natural substances.

During the experiment, bee families were selected on the basis of zootechnical indicators, and on the basis of similarity, three different experimental groups consisting of 8 bee families were formed. The first group was control and the other two were experimental groups. In the first experimental group of both groups, 1 liter of sugar corn juice was added to 10 liters of 50% sugar juice, and in the second experimental group, 1 liter of wheat grass juice was added to 10 liters of sugar juice, from March 28 to May 10, 2019, at 300 mg per day.

No additional feeding was performed in the control group. Bees in all groups were controlled according to pre-established common methods.

Data on the impact of natural nutrients on the development of the bee family are given in Table 1 below.

Table 1  
The effect of natural nutrients on the development of the bee family

Indicators	n	28.03.2019		16.04.2019		10.05.2019	
		Generation quantity Square	Mother bees lay eggs, pcs	Quantity, square	Mother bees lay eggs, pcs	Quantity, square	Mother bees lay eggs, pour pieces
Control group (sugar juice)	8	95,7±5,1	797,5±9,4	121,0±4,1	1008,3±9.3	138,9±8.7	1157,5±11,5
I-experimental group, sugar juice +1 liter of sugar oat juice	8	100,5±2,6	837,5±22,1	139,8±8,9	1165,0±11,4	156,9±18,4	1307,5±20,5
Experiment group II, sugar juice + sumalak juice	8	104,4±3,4	870,0±42,5	158,9±10,1	1324,2±15,4	184,4±22,5	1536,6±25,6

The data from Table 1 show that when sugar corn water was used in experimental group I, the number of offspring in the family on April 16 was 15.5% higher than in the control group and 31.3% higher in experimental group II. Similarly, on May 10,

these figures were found to have increased by 12.9% and 32.7%, respectively.

Information on the use of natural nutrients for the development of bee families for the artificial breeding of queens can also be seen in Figure 1 below

**Figure 1. Dynamics of daily egg laying of mother bees in control and experimental groups fed with natural nutrients.**

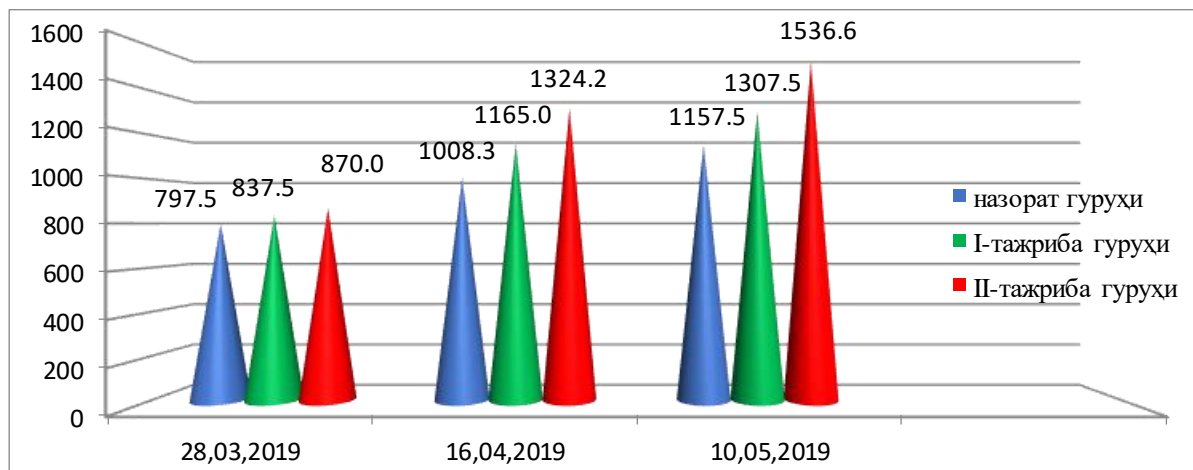


Figure 1 shows that in the control and experimental groups I and II, the daily egg production of mother bees increased from month to month. On April 16, when the daily egg-laying rate of queens increased day by day, it was found that in experimental group II it increased by 15.5% and in experimental group I by 31.3%. Similarly, on May 10, these ratios increased by 12.9% and 32.3%, respectively. ( $R > 0.999$ ). Various natural nutrients were used in the cultivation of queen bees. To do this, two different groups of options were used in the artificial breeding of queen bees. When brooding bees were given to their families to raise larvae, they were given two different feeds. In the control group, only framed honey feed and 50% sugar juice were used. In Experimental Group I, one liter of sugar corn juice was added to 10 liters of 50% sugar juice, and in Experimental Group II, wheat grass juice was added in a 10/1 ratio. Natural nutrients affect the consumption of bee larvae.

Since early spring, in artificial beekeeping, in order to ensure the growth and development of the bee family, sugar syrup, which is the food of bees, is added to the feed as a natural supplement. As a result, during the breeding of artificial bees, the intake of larvae increased by 18-22%, the weight of queens increased by 8-12 mg, and the daily number of eggs laid by queens reached 2,000.

In beekeeping, in order to artificially breed mother bees, it is important to use sugar corn water and wheatgrass juice in addition to

mineral and natural nutrients, sugar juice, which stimulates bee families.

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