

MEDICINAL EFFICACY OF "PCHELKA" BIOSTIMULANT

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Abstract. *In this article, the medicinal effectiveness of the bee biostimulant was studied experimentally in the bee farm in Andijan region, where 6 groups from 7 bee families were studied according to the principle of analogues. Clinical and mycological investigations were described in detail.*

Keywords: *bee solution, damaged bee family, "Bee", biostimulant bee colonies, frame, cells.*

Introduction: Beekeeping plays a major role in the implementation of the country's food program, thanks to pollination of agricultural crops with the help of bees, their yield increases somewhat, and their quality improves. Also, its honey, propolis, pollen poison and milk are medicinal products widely used in our medicine.

Today, the demand for bees in Uzbekistan and maintaining its reasonable specialization in the production of honey, which is a medicinal product, forms the basis of our economy.

Bees, like other domestic animals, are among the beneficial insects that are often affected by diseases and pests. Many predatory insects, mites and arachnids also harm bees, and some of them, along with harm, bring various infectious and invasive diseases to the bee family and are the main means of spreading them.

Bee diseases and pests are widespread in Andijan region. As a result of their damage, the production of honey from each bee colony is decreasing.

However, the origin of bee diseases, the period of their transmission and the damage they cause in beekeeping have not been fully studied in the region.

Results: Medicinal effectiveness of "Pchelka" biostimulant was studied experimentally in the pilot farm of Andijan Institute of Agriculture and Agrotechnologies, where 6 groups from 7 bee families were formed according to the principle of analogues.

When the breed is weakly damaged, the drug is fed with sugar syrup in concentrations of 0.2 and 0.3, when it is severely damaged - 0.3 and 0.4% in the amount of 15 - 20 ml per frame of bees for 7 days. Control families were fed sugar syrup.

It was found that feeding families with 0.2% "Pchelka" solution in summer when the offspring is weakly affected is ineffective (table-No. 1).

According to the results of clinical and mycological studies, 5 out of 7 bee families (72.3) were restored to health. When using the drug in a concentration of 0.3%, the therapeutic efficiency was 100% with a slight damage to the breed.

6 out of 7 bee families (86.2%) with serious damage to the breed were treated with 0.4% "Pchelka" solution; The drug in 0.3% concentration is not very effective (72.3%).

7.0±0.2 (group 1) to 12.6±0.6 kg of commercial honey was obtained from 1 bee family (group 2) of the treated bee families; in control, these indicators were 3.5±0.7 kg per family. Bee families of group 2, which built the foundation of wax, showed the greatest ability to build wax, 2.5 ± 0.3, and the least - group 4, their corresponding indicator was 1.2 ± 0.3.

Table 1

Therapeutic efficacy of "Pchelka" and productivity of families during summer treatment ($M \pm \bar{m}$)

| Group | The degree of damage to the breed | Biostimulant concentrations, % | Number of families | | Processing efficiency, % | Amount per family | |
|-------------|-----------------------------------|--------------------------------|--------------------|---------|--------------------------|---------------------|--------------------|
| | | | Total | healthy | | commercial hone, kg | Reconstructed Wax, |
| 1 | weak | 0,2 | 7 | 5 | 72,3 | 7,0±0,2 | 1,3±0,2 |
| 2 | weak | 0,3 | 7 | 7 | 100,0 | 12,6±0,6 | 2,5±0,3 |
| 3 (control) | | | 7 | | | 3,5±0,7 | 0,6±0,2 |
| 4 | strength | 0,3 | 7 | 5 | 72,3 | 6,1±0,3 | 1,2±0,3 |
| 5 | strength | 0,4 | 7 | 6 | 86,2 | 10,5±0,4 | 3,0±0,4 |
| 6 (control) | | | 7 | | | | - |

The bee colonies of the 3rd (control) group recovered 0.6±0.2 and wax, but the 6th group showed no recovery ability.

Biostimulant "Pchelka" has a positive effect on the condition of bee colonies (Table 2).

Table 2

State of bee colonies before and after treatment with "Pchelka" in summer ($M \pm \bar{m}$)

| Group | Number of families | Before processing | After processing | | |
|-------------|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 19.06.02 | 17.07.02 | 14.08.02 | 19.09.02 |
| | | families power, frame | families power, frame | families power, frame | families power, frame |
| 1 | 7 | 5,3±0,4 | 6,1±0,3 | 7,7±0,4 | 10,2±0,6 |
| 2 | 7 | 6,3±0,2 | 8,2±0,6 | 10,2±0,4 | 13,3±0,6 |
| 3 (control) | 7 | 5,5±0,7 | 6,5±0,5 | 2,8±1,0 | 8,1±0,8 |
| 4 | 7 | 5,4±0,5 | 7,9±0,4 | 8,3±0,5 | 12,6±0,5 |
| 5 | 7 | 5,4±0,3 | 7,1±0,6 | 9,3±0,4 | 13,3±0,5 |
| 6 (control) | 7 | 5,4±0,3 | 8,0±0,8 | 7,0±0,9 | 6,9±0,7 |

Group 2 bee colonies were 6.3±0.2 frames before treatment and 13.3±0.6 at the end of the beekeeping season, respectively. Meanwhile, control bee colonies had 8.1±0.8 frames of development. Bee colonies of group 5 treated with 0.4% "Pchelka" solution had 13.3 ± 0.5 development as of September 19, 2023, while the control group had 6.9 ± 0.7 has been families treated with "Pchelka" tolerate winter well. General departure of bees for wintering in beekeeping

in 2021-2023. was 2.3%; One family died in control groups 3 and 6 Table-3. Bee families of experimental groups had a strength of 4.9 ± 0.2 - 3.9 ± 0.2 frames and 9.4 ± 2.3 - 3.9 ± 0.2 thousand sealed brood cells after wintering. The difference in the number of offspring in the experimental and control groups of bee colonies is statistically significant, except for bee colonies of groups 5 and 1. Production tests on the therapeutic efficiency of "Pchelka" biostimulant in beekeeping were carried out in the experimental farm of Andijan Institute of Agriculture and Agrotechnologies in Table-4.

Table-3

The state of the bee family after wintering
It is treated with "Pchelka" biostimulator ($M \pm \bar{m}$)

| Group | Number of families | Breed number | |
|-------------|--------------------|---------------|-------------------|
| | | frame | Hundreds of cells |
| 1 | 7 | $5,3 \pm 0,8$ | $24,7 \pm 3,1$ |
| 2 | 7 | $6,9 \pm 0,2$ | $29,9 \pm 5,1$ |
| 3 (control) | 7 | $4,9 \pm 0,2$ | $9,4 \pm 2,3$ |
| 4 | 7 | $5,0 \pm 0,4$ | $15,6 \pm 3,7$ |
| 5 | 7 | $6,0 \pm 0,7$ | $25,6 \pm 4,8$ |
| 6 (control) | 6 | $3,9 \pm 0,2$ | $3,9 \pm 0,2$ |

Table-4

Results of production tests of "Pchelka" biostimulant ($M \pm \bar{m}$)

| Farm | Number of families | | Processing efficiency, % | The power of families, frames | Amount per family | | |
|---|--------------------|---------|--------------------------|-------------------------------|-----------------------|----------------------|-------------------|
| | Total | healthy | | | breed, thousand cells | commercial honey, kg | reconstructed wax |
| Andijan Institute of Agriculture and Agrotechnologies experimental zone | 150 | 142 | 94,6 | $12,1 \pm 0,7$ | $16,5 \pm 1,8$ | $10,1 \pm 2,0$ | $2,0 \pm 0,5$ |
| "Jakhonshokh Kelajagi" beekeeping cluster in Jalakuduk district | 30 | 27 | 90,0 | $13,3 \pm 0,8$ | $17,6 \pm 1,9$ | $18,9 \pm 2,5$ | $3,5 \pm 0,8$ |
| "Asalari Shifosi" beekeeping cluster in Bulokboshi district | 80 | 74 | 92,5 | $15,5 \pm 1,0$ | $18,8 \pm 2,0$ | $21,5 \pm 2,0$ | $3,7 \pm 0,8$ |
| "NEKTAR" beekeeping cluster in Andijan district | 60 | 57 | 95,0 | $14,1 \pm 1,2$ | $17,3 \pm 1,8$ | $18,3 \pm 2,0$ | $3,1 \pm 0,4$ |

The efficiency of treatment of bee colonies with the drug is 90.0 - 95.0%. The best result was in the "NEKTAR" beekeeping cluster of Andijan district, 57 out of 60 bee families were cured, while the treatment of bee families in the "Jakhonshokh kelajagi" beekeeping cluster of Jalakuduk district showed the least efficiency (90.0%). At the end of the beekeeping season, there were 16.5 ± 1.8 to 18.8 ± 2.0 thousand imprinted progeny cells in bee colonies in treated apiaries. Honey productivity was 10.1 ± 2.0 kg in the pilot farm of Andijan Institute of Agriculture and Agrotechnologies, 21.5 ± 2.0 kg in the apiary of the "Asalari Shifosi" beekeeping cluster in Bulokboshi district.

Conclusion: Taking into account the fact that beekeeping is one of the most profitable branches of agriculture, in this article, the measures for the distribution of bee feed in the beekeeping farms in a high-quality and standard manner were described in detail.

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