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EFFECT OF APIFLOX PREPARATION AGAINST INFECTIOUS DISEASES OF BEES

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ABSTRACT

Feeding families of bees with the drug Apiflox (DV-enrofloxacin), (1 ml of Apiflox in 2 liters of sugar syrup), 100 ml continuously for 3 days and repeating this course of treatment after 7 days completely heals the bees from the American and European foulbrood. The first - we gave each family of the experimental group 100 ml of this syrup continuously for 3 days from the syrup with the addition of 1 ml of the drug apiflox to 2 liters of sugar syrup. We considered this to be the first course of treatment. We monitored the families of treated bees every day. On examination, the diagnosis was made based on the age, color, consistency of the larvae and the foul odor coming from the dead larvae. In addition, a smear was prepared from the rotten mass inside the cell and a B. larvae rod was found in a 900-magnified lens of the microscope. We gave sick children in the second control group only syrup without giving Apiflox in the first course of treatment.

KEYWORDS: *Apiflox, Bees, Infectious Disease, Putrefaction Disease.*

INTRODUCTION

Today in beekeeping are used many different district antibiotics against infectious (bacteriosis) diseases. Especially tetracycline, oxytetracycline, streptomycin, syntomycin, penicillin, bitsillin and others. These antibiotics have been used by beekeepers themselves in such large and large doses without medical supervision that microorganisms become resistant to them, in some cases the drugs do not work, and bee families die without treatment.

The worst part of this case is that the antibiotic-contaminated honey does not meet the standards of the world market and fails in the world market.

Therefore, a completely new type of antibiotic drug with a completely different chemical structure is needed against these diseases.

We searched the literature and did not find a source about new drugs used against these diseases in beekeeping. However, a drug containing 10% enrofloxacin, which belongs to the group of fluoroquinolones against acute infectious diseases in livestock, poultry, piglets and chickens, is widely used and is effective in the treatment and prevention of acute infectious diseases.

Therefore, we intended to test this drug against American and European rot diseases, which cause great harm to beekeeping. Given that enrofloxacin also affects mycoplasmas, we decided to test it against Ascospheerosis and Aspergillosis fungal diseases as well.

Method of examination and brief description of diseases.

Apiflox is an oral solution against infectious diseases. The drug contains 10% of the active substance enrofloxacin, calcium hydrate oxide, benzene alcohol and water. From the appearance of the drug is a light yellow solution. Enrofloxacin inhibits the DNA gyrase of bacteria, as a result of which bacteria cannot multiply. The elimination half-life of enrofloxacin is about 4 hours.

In the instructions of the series of the drug produced in Spain, Germany recommended that chickens be given 0.5 ml of the drug mixed with 1 liter of water for 3-5 days. Based on this, we take 10 doses from 0.1 ml to 1.0 ml, add each dose to 2 liters of syrup (1 kg of sugar dissolved in 1 liter of water) and prepare a fresh solution for 10 families every day for 3 days. We have developed an experimental method to test whether the drug has the ability to treat and prevent bee diseases by giving 100 grams.

American putrefaction disease. The causative agent is a gram-negative rod-forming bacillus larva (*Bacilla larve*) that produces spores. To diagnose the disease, first a visual examination was performed, looking at its clinical signs. On examination, the diagnosis was made based on the age, color, consistency of the larvae and the foul odor coming from the dead larvae. In addition, a smear was prepared from the rotten mass inside the cell and a *B. larvae* rod was found in a 900-magnified lens of the microscope. When diagnosing this disease, it was necessary to differentiate it from European diseases such as rot, mesothelioma and varroaosis, depending on the clinical signs.

European rot - a disease of open larvae, 4-day-old larvae. There are several pathogens: - *Streptococcus pluton*, *S. apis*, *Bacilla alvei*, *B. orpheus*. Therefore, some authors say that under the name of "European rot" disease is a combination of two or three different diseases of

different etiology, but with the same clinic.

The diagnosis of this disease was made on the basis of clinical signs in the cell and microscopic examination. For microscopic examination, up to 10 newly dead larvae were obtained from the cage cells. If there are no new dead larvae, the dead larvae are removed and sterilized for 15-20 minutes. were dissolved and they were examined under a microscope by preparing a grease from the mass in the intestine. Lanceolate cocci can be found under a microscope. The smears were stained by the Gram method and held for 15-20 minutes in a 2% alcohol solution of carbolic fuchsin to stain the spores.

The experiments were conducted on bee families on a private bee farm in Taylak district of Samarkand region, where American and European rot diseases were detected.

Inspection results:

Experiments on the prevention of diseases of bees with the drug began in late April, because this is the period when the most common diseases of bees rot and mold.

Our experiments showed that doses of 0.1-0.2-0.3-0.4 ml of the drug are not enough to prevent disease, as at these concentrations in 8 families were found to have American rot, and in 1 family - European rot. No diseases were reported at higher doses. Of the 30 families in the non-Apiflox control group, 2 had American rot and 1 had European rot.

Table 1. The effectiveness of apiflox bees in the prevention of American and European rot, diseases(sum of 3 experiments with 10 bee families in each dose)

Number of bee families	Amount of apiflox, ml.	Apiflox melted syrup, l.	Prep-tdose ml 3 days intermittently. 1 family	Occurrence of diseases for 2 months after treatment	
				American decay	European decay
30	0,1	2	100	3	-
30	0,2	2	100	1	-
30	0,3	2	100	-	-
30	0,4	2	100	-	-
30	0,5	2	100	-	-
30	0,6	2	100	-	-
30	0,7	2	100	-	-
30	0,8	2	100	-	-
30	0,9	2	100	-	-
30	1,0	2	100	-	-
Control 30	-	-	100pure syrup	2	1

In order to study the therapeutic properties of the drug Apiflox in the above diseases, 6 American and 6 European bee families infected with rot were isolated for experiments, which were divided into 3 groups of 2 - experimental and control groups. The first - we gave each family of the experimental group 100 ml of this syrup continuously for 3 days from the syrup with the addition

of 1 ml of the drug apiflox to 2 liters of sugar syrup. We considered this to be the first course of treatment. We monitored the families of treated bees every day. As a result, the symptoms in the families disappeared within 5-7 days. We repeated this course of treatment on the 8th day, taking into account the emergence of diseased young bees from the hives after 7 days. As a result, after the 2nd course of treatment, the bee families completely recovered from the above diseases and no symptoms of the disease were observed during our 2-month follow-up.

We gave sick children in the second control group only syrup without giving Apiflox in the first course of treatment. As a result, the disease began to spread to more hives in the family. Therefore, we also treated sick families in the control group with 2 courses of treatment.

CONCLUSIONS:

- 1) Mix 1ml of Apiflox with 2 liters of sugar syrup (1 kg of sugar dissolved in 1 liter of water) and make 100 milliliters continuously for each bee family for 3 days to prevent American and European rot for 2 months (observation period).
- 2) If 1 ml of Apiflox is mixed with 2 liters of sugar syrup (1 kg of sugar dissolved in 1 liter of water) and given to each bee family 100 milliliters continuously for 3 days and the same course of treatment is repeated after 7 days, bees will be cured and cured of American and European rot.

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