



Measures for the prevention and treatment of varroatosis in bees.

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ABSTRACT

The article provides information on the prevention and treatment of varroatosis, which is often found in bees and causes great economic damage. It is an invasive disease that can be acute or chronic. In the prevention of this disease, it is advisable to ensure zoohygienic environmental conditions and the exchange of effective drugs against the disease.

Keywords:

Varroatosis, mite, pyrethroid, honeycomb, drug, medicine, disinfection.

Introduction: Over the years of independence, comprehensive measures have been taken in the country to develop the beekeeping industry. It is also necessary to radically improve the management system of the beekeeping network, organize breeding work in the industry on a scientific basis, increase the efficiency of beekeeping, further increase the volume and range of honey production, introduce modern honey processing technologies, Decree of the President of the Republic of Uzbekistan dated October 16, 2017 No. DP- 3327 "On measures for the further development of the beekeeping industry in the Republic" in order to increase the export potential of the industry, apply best practices in the field of beekeeping in all regions of the country, serves as a program for the further development of this network. Our country has very favorable geographical conditions for the development of beekeeping. Currently, beekeeping companies have been replaced by large farms and private beekeeping farms. Private beekeeping farms number from 50 to 100-200-500 bee families, new private beekeeping farms are multiplying.

The development of beekeeping is mainly hindered by varroatosis, acarapidosis, American and European rot, nosematosis, ascospherosis, pesticide poisoning and a number of other infectious and parasitic diseases.

It is not known in which areas these diseases are more or less common, at what time of the year they occur, the causes of diseases, the percentage of bee colonies affected by these diseases and the amount of damage caused by them.

In the field of beekeeping, imported drugs that are not approved by regulatory documents are used to treat the above diseases. For the treatment of varroatosis, only Russian-made Bipin is used. Jakobson's varroa mites, which cause varroatosis, have already become resistant to the drug, and its effect on mites has decreased.

Based on this, in recent years, intensive research has been carried out in beekeeping to study bee diseases and develop measures to combat them.

Varroatosis is one of the most dangerous

diseases of bees today and is a serious obstacle to the development of beekeeping. Despite more than forty years of study of the disease and the use of various methods to combat it, the disease is on the rise, and the pathogenesis and pathogenicity of the disease are increasing.

Varroaosis is an invasive disease of bees caused by *Varroa Jacobsoni* gamasid mites, a member of the Parasitiformes oryadine Gamasoidea family. The mites parasitize the bodies of worker bees, male bees and young larvae. The body length of the female tick is on average 1.1 mm, width 1.7 mm; body length of male tick 1.0 mm, width 0.9 mm. The main areas where ticks feed are between the head, chest and abdomen, and between the 3 anterior abdominal wheels. In the body of one worker bee, male bee or queen bee, from 3 to 5 mites can live (Figure 1, 4).

Varroa mites hibernate only females and develop sexually in the bodies of worker bees, queens and males, as well as larvae develop and multiply in the body on honeycombs. Before covering the larvae, the female tick enters the cells and lays 3 to 8 eggs on the walls of the cells or on the body of the larva. Several female mites may enter the cell at the same time to lay their eggs. The mite egg is egg-shaped and milky white in color. The female tick hatches from the eggs on the 8-9th day after the eggs are deposited on the cells, and the male ticks hatch on the 6-7th day. The female mite joins the male in the closed bee hive and after mating, the ready female mite attaches itself to the body of the bee as the bee leaves the hive and comes out with them on their body. Female ticks can fast for 5-6 days at 22-25°C and 70-80% relative humidity. In dark hives where there are no bees, they can live 6-7 days, in open hives they live - 15 days, in closed ones - 32 days, in the dead bodies of bees - 3-5 days, in the bodies of dead pupae - 7-11 days. O'rta er miqyosidagi joylarda urg'ochi kana 5 oydan 12 oygacha va undan ortiq yashashi mumkin.

Female mites, with their piercing sucking apparatus, damage the chitinous membrane of the bee, feed on the hemolymph of the bee, and this opens the door for infections and allows them to become infected

with various other diseases. When mites feed on a bee's body for 2 hours, the bee loses 0.1 to 2.2% of its live weight. In addition, ticks themselves are carriers of various bacterial and viral diseases. As a result, the protective system of bees is weakened, their life expectancy is sharply reduced, productivity and pollinating properties are reduced. If varroaosis is not treated regularly for a year, the family may die.

Diagnosis of varroaosis. In hives in late summer and early autumn, tick-borne encephalitis is easily identified and easily identified. In spring and summer, mites can be found on bee carcasses, on worms and on the wooden surfaces of hives.

In winter, the mites are also dropped to the bottom of the hive and it is also seen that the mites are thrown to the bottom along with the garbage. In adult bees and male bees, they are more often found in the body behind the 2nd and 3rd abdominal wheels. (Figure 1, 1-2-3).

In order to detect the presence of mites, one can determine by spraying them once on cardboard paper smeared with petroleum jelly at the bottom of the hive, treated with one of the types of drugs, such as bipin, flucin, flumetrin. If varroosis of mites is found in the hive for the first time, then bees, dead bees are taken to nearby veterinary laboratories, at the rate of 150-200 g of waste from the bottom of the hive, 200 g of live bees and cut 3-15 cm of cells with a worker bee or bee larvae by males from the bottom hives are placed in a small plywood box and sent for inspection with an observer and the cover letter. The cover letter of the observer must include the address of the establishment, the location of the hive, the name of the beekeeper and the time of onset of the disease.

Disease prevention. Beekeepers keep uninfected bees in a separate area of about 15 km in a bee-free zone. Queen bees and new small colonies are acquired from uninfected hives. It is not recommended to keep weak bee colonies in the apiary. If there is no flowering plant in the area where the hive is located, then they are fed with food rich in protein. In the

apiary, the hives are placed on stakes at a height of 30-40 cm from the ground in a dry, windy, sunny place. The equipment and appliances used on the apiary are disinfected.

Fight against varroatosis. The fight against varroatosis is carried out by killing mites in the bodies of adult bees and worms.

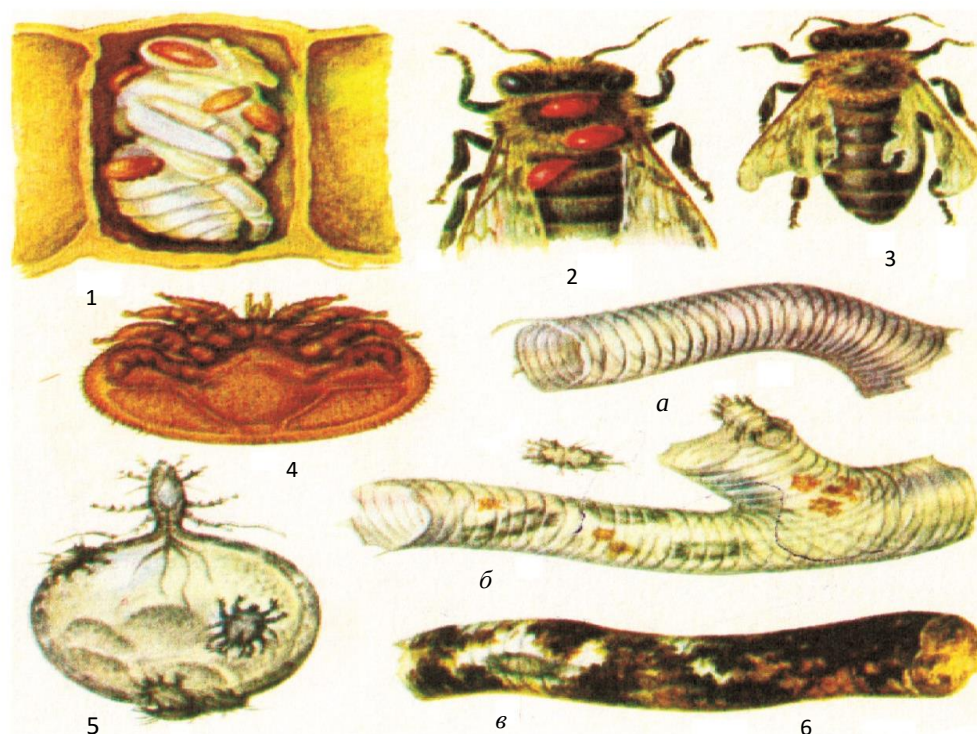


Figure 1. Arachnose bees:

1 - varroatosis mites in the puppet state of bees; 2 - in bee mode; 3 - condition of bees infected with varroatosis; 4 - female ticks varroatosis; 5 - joint view of female and male ticks; 6 - trachea of bees affected by acarapodosis:

a) healthy bee trachea;

b) the original type of damage;

c) severely damaged appearance.

Fight against mites in the body of adult bees. Ticks that live and parasitize on the body of bees are killed with the help of various odorous poisonous preparations.



Figure 2. Apparatus Varromor.

For this purpose, the following are effectively used: ammonia, valine, flucin, bipin, folbex and other drugs.

Recommendations for the use of antivarroa drugs:

1. Flucin drug.

1.1. Flucin is an emulsifying concentrate, a dark brown liquid with a characteristic odor, packaged in 1 ml ampoules.

1.2. The drug is stored in a dark room at a temperature of 10-20 °C.

1.3. Fluxin acts on varroa mites by contact.

1.4. The drug does not have a negative effect on the development of bees in families of bees, worker bees, queens, does not accumulate in honey, wax, pollen.

2. How to use.

2.1. Antibacterial treatment against ticks is carried out with the preparation during the day, when the temperature exceeds 18 °C, when the bees are actively flying.

2.2. To prepare a working solution, 1 ml of the drug is dissolved in 5 liters of water.

2.3. Each cell of the bee family is treated 3 times with an interval of 7 days at the rate of 7-8 ml.

2.4. In hives, the residual action of flucin against ticks persists for 5-6 days.

2. The drugs Valin, Amiacar and Bipin are used in the same way.

Only 1 ml of these preparations is dissolved in 2 liters of water.

3. Also effective are cinnamon, dandelion, sage, burdock decoction and herbal powder.

The powder is sprayed between combs, 10 g for each sick family. This technique is repeated 3 times with an interval of 7 days.

Between each infected comb 3 times with an interval of 7 days, spray 100 g of the drug in 10 ml of decoction boiled in 500 ml of water for 15 minutes. Powders and decoctions also give good results.

Conclusions. Uninfected bees should be kept in a separate area of about 15 km in a bee-free zone.

In the apiary, the hives are placed on stakes at a height of 30-40 cm above the ground in a dry, windy, sunny place and the hives are moved to areas depending on the season.

It is recommended to alternate effective drugs used in the prevention and treatment of the disease. However, when a specific drug is used against a specific disease (parasite), the disease develops resistance to that drug.

References:

1. Davidov A.S. Problems and ways of solving acarapodosis in beekeeping. Journal "Zooveterinary", 2013, Issue 3.
2. Davidov, T. Katayseva, G. Uzakova. Valine against varroaosis of bees. Journal "Zooveterinary", 2012, Issue 2, 16 p.
3. A.S.Davidov, G.P.Islamov. Epizootology and economic damage from psoroptosis. The role and perspective tasks of young researchers in the development of agricultural science and production. Materials of the scientific-practical conference at the Samarkand Agricultural Institute, part 1, 129 pages.
4. Mavlanov S. Oripov A., Davidov O., Kataytseva T. Veterinary measures in preparation for winter // Journal "Agriculture of Uzbekistan", 2014, Issue 9, p. 12.
5. Davidov A.S., Dzhurakulov O.K. "Methods and means of preparing disinfectant solutions in beekeeping" Agronauka 3 (41), 2016, p. 25
6. Davidov A.S., Doskulov V.M., Dzhurakulov O.K. Materials of the International Scientific Conference dedicated to the 90th anniversary of the Veterinary Research Institute "Medicinal plants against bee diseases", Samarkand - 2016, pp. 86-88
7. A.S.Davidov, V.M.Doskulov, O.K. Dzhurakulov "Medicinal plants against bee diseases" Veterinarian popular scientific journal 2017, No. 4, pp. 39-40.
8. Duskulov V.M., Davidov O.S., Isaev M., Dzhurakulov O.K. "The effectiveness of local medicinal plants in the treatment of bee diseases" Veterinary Medicine, Issue 9, 2018. P. 33-35.
9. Duskulov V.M., Elmuradov B., Meyliev M. "Highly profitable sector of beekeeping" Veterinary Medicine, Issue 12, 2018.

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