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PP-071 [Bee Health]

Beeswax foundation as a new method of transporting medical substances for bee disease control

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Beeswax foundation+propolis

Result

The control of known bee diseases bacteria, bacilli, microbes, streptococci, fungi by way of existing methods is ineffective. We have offered a completely new method, not in use before, in treating and preventing bee diseases.

It is based on restoring the protection against pathogenic microflora to the bees, that they provide in nature for themselves, using propolis and other methods. It is known that the sterilization of wax is an indispensable condition in the production of wax foundation. In fact, as a result of this process, the wax becomes dead. The wax foundation made from this wax is devoid of natural protection from pathogenic microflora. The essence of our invention is that we created a technology that allows the propolis fractions to be introduced into the wax foundation. These fractions inhibit the development of pathogenic microflora.

For the first time in the world practice of beekeeping we have proposed a mechanism of delivering/transporting the protecting (therapeutic) components against pathogenic microflora to a bee family. It is important to note that the applied therapeutic and prophylactic substance is exclusively a product made by the bee itself, that is, organic! Then it is introduced into the wax foundation which performs several important functions.

For treating and preventing a number of diseases, of basic importance are:

- time of starting the treatment or its preventing
- time (period) of pathogenic microflora exposure to the drug
- a reliable and simple method of feeding the medical substance, ensuring a constant contact of a bee with the medical substance from an egg to adult.

The period of spring development of bee-colonies coincides with the period of growth of the mani diseases; at the same time the bees are forming their honeycombs most intensively. The bees are known to use sometimes up to 70-80% of wax from the wax foundation itself and add only 20-30% of their own, when rebuilding their honeycombs from beeswax. Using this circumstance, and the fact that the main component of protection against bee diseases is propolis, we have introduced propolis fractions into the beeswax. A new product "Propolis Beeswax Foundation" was tested in vitro in the laboratory conditions of the Prokopovych Institute of Beekeeping and other laboratories. The results of laboratory studies have shown that the beeswax foundation with propolis exhibits an inhibitory action, with anti-mycotic effect on the fungi Askosphaera apis, Aspergillius flavus making 85-95%.

The production tests have confirmed the results of laboratory studies and high efficiency.

We have developed a technology for the production of a propolis beeswax foundation, and the technical specifications for "Propolis beeswax foundation" have been approved. It is successfully produced more than 10 years.

Honey bees have a proven technology of controlling not only the fungal diseases through propolis; in their arsenal, there are also special protectors useful bacteria. Continuing our tests we have segregated bacteria of the Bacillus genus which are transported by beeswax into a bee-colony.

Using of previously used technology and the transporting mechanism of the therapeutic components to a bee family we have tested the beeswax - "Organic Super Probiotic".

Conclusion: Production tests confirmed the results of laboratory studies and high efficiency of the "Propolis wax foundation" using of which provides good development of bees.

It was identified according to the brood nests expand that the quantity of bees in the bee-hives with the propolis wax foundation was considerably higher (in 3,6 times as much) than in (control) bee-hives with standart wax foundation.

For 5 years of research, the honey-bee colonies with propolis wax foundation increased the quantity of the collected honey in 16,5 kilos more than the (control) bee hives.

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The fight against known bee diseases - bacteria, bacilli, germs, streptococci, fungi - is ineffective using existing methods. We have proposed a completely new method of treating and preventing bee diseases that has never been used before. It is based on the restoration of bees' protection against pathogenic microflora, which they provide for themselves in nature. For the first time in the world's beekeeping practice, we have proposed a mechanism for the delivery/transportation of protective components to the bee family. It is worth noting that the therapeutic and prophylactic substance is introduced into the wax base to perform several important functions.
For the treatment and prevention of a number of diseases, the most important are
- time to start treatment or prevent it
- time (duration) of the drug's effect on pathogenic microflora
- a reliable and simple method of feeding the drug substance, which ensures constant contact of the bee with the drug substance from egg to adult.

The period of spring development of bee colonies coincides with the period of development of major diseases; at the same time, bees are most intensively forming honeycombs. It is known that bees sometimes use up to 40% of the wax from the wax base itself and add up to 60% of their own wax when rebuilding honeycombs from wax. Using this fact, as well as the fact that propolis is the main component of protection against bee diseases, we introduced propolis fractions into the beeswax. The new product Propolis Wax Base was tested in vitro at the Prokopovych Institute of Beekeeping and other laboratories. The results of laboratory tests showed that the wax base with propolis has an inhibitory effect, the antifungal effect on Askosphaeraapis and Aspergilliusflavus fungi is 85-95%. This was confirmed in production conditions at apiaries. As a result of the work carried out, the mass production of Propolis Wax Base has been established.
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