



Placing Apistan® strips into brood chamber of a hive

For more information on Varroa mite control and to report all severe cases of mite infestation, please contact:

The Ministry of Agriculture's Beekeeping Extension staff; or

The Chief Plant Protection Officer

Ministry of Agriculture

Bodles Agricultural Research Station

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Additional Reading

Mobus, de Bruyn, C., 1993. *The New Varroa Mite Handbook*. Technical Centre for Agricultural and Rural Cooperation. pp. 6 -107.

Morse, R.A., 1983. *Honey Bee Pest, Predators and Diseases*. Comstock: University of Cornell, Ithaca and London. pp. 205-208.

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Wedderburn, N.E., 1991. *Bee Pest and Beekeeping Diseases*. Beekeeping Information Booklet No.8, Beekeeping Development Project, Ministry of Agriculture, Jamaica, W.I. p 4.



Female mites on bee's head



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The Varroa Mite



A Pest of the European and Asian Honeybees

The first reported case of Varroa mite infestation in Jamaica was in Bull Bay, in February 1999. Since then all indications are that the pest has spread to apiaries islandwide.

The Varroa mite (*Varroa jacobsoni*), which attacks bees, is a pest of the European Honeybee (*Apis mellifera*) and the Asian Honeybee (*Apis cerana*). The mite can be found in most parts of the world.



Ministry of Agriculture



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Adult mites are 1.1 - 1.6 mm in diameter, or about the size of a pinhead. The female is shiny and reddish brown in colour and it is readily seen with the naked eye. The male is white, to clear and is found inside the brood cells.

Varroa mites puncture the bee between its body segments and remove fluid (haemolymph). During the process of piercing and sucking, they transmit viruses that can cause deformity in adult bees.

The number of mites in a colony will increase over a period, depending on the climatic conditions.

Initially, little or no harm is done to the colony, but after a year there may be one to 10 mites. In the second year, this number may increase to over 100; while in the third year there may be as many as 1,000 mites per colony.



Female Varroa mites on bee's body

When mites in these numbers infect the colony, the "nurse" bees become infected and deformed and the work in the hive is drastically reduced. Meanwhile, the number of mites will continue to increase.

Symptoms of Varroasis

Symptoms of Varroasis usually occur when there is a high level of mite infestation. Recognizable symptoms are deformed larvae, pupae and evidence of paralyzed bees at the entrance of the hive.

Other symptoms of mite attack on a colony include:

- low flying activity in periods when flight is expected to be high;
- reduced capacity to resist common diseases, such as Chalk Brood, American and European Foul Brood;
- weakened/collapsed colonies, resulting from the shortened lifespan of Worker bees;
- a marked decrease in output of honey, wax and other hive products;
- wing deformity, paralysis; and
- abandoned hives, with the bees leaving behind the Queen, brood and pollen.

Detection of Varroa Mite Infestation

Early detection of Varroa mites is critical for effective control. The Ministry of Agriculture is, therefore, requesting that beekeepers check their apiaries regularly for signs of this pest. Methods of inspection include:

- collecting debris from floorboards of the hive on a white surface and examining it for reddish brown mites;

- removing the purple-eyed worker and drone pupae from their cells 20 days after the eggs have been laid, and examining for mites that may be attached to their abdomens;
- inspecting the walls of these cells for evidence of the pest; and
- periodically examining adult bees covering the open broods, for mites attached to their bodies.

Spreading Varroa Mite Infestation

Man has been named as the most critical agent in spreading the mite across continents.

The mite is spread by the following methods:

- movement of infected bees by beekeepers from one location to another;
- movement by infected swarms;
- drifting adult bees, especially Drones; and
- the importation of bees.

Control Methods

Many methods of control have been employed in countries where the mite is present. These include the use of chemical formulations, heat treatment and hive manipulation. It is important to note that Integrated Pest Management is recommended for the control of this mite.

Hive Manipulation

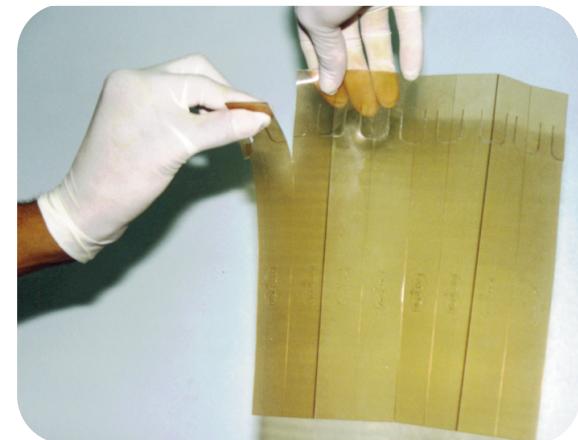
Hive manipulation is a time-consuming process, but it is recommended at times when the use of chemicals is prohibited.

Beekeepers can cage the Queen, thereby preventing her from laying in any cell. This will cause the hive to become broodless.

The next step in this process is to place two combs with Drone cells **only** in the centre of the brood nest and to allow the Queen to lay.

These combs should be removed and burnt about one to two days after all brood cells are sealed. This procedure should be repeated once or twice, before the Queen is allowed to lay freely on other combs. This will reduce the number of mites that develop in the colony.

At present, **Apistan® strips** are the only chemicals approved by the Ministry of Agriculture for Varroa mite control in Jamaica, and the strips are sold to registered beekeepers between May and August of each year.



Separating **Apistan®** strips

The restricted sale period is to encourage all beekeepers to treat their hives within a specific period and to reduce the contamination of hive products.