Formic Acid (214900) Fact Sheet

Summary

Formic Acid is used to treat tracheal and varroa mites in honey bee hives. There are three registered products. At this time, only one (Mite-Away II) is marketed. The marketed product is formulated as an impregnated pad, and contained in a vented plastic pouch designed to appropriately release formic acid vapors. Although this impregnated pad is safer to use than liquid formulations available in other countries, personal protective equipment is required to preclude potential irritation to eyes, skin and respiratory tract of applicators. It is an alternative to the synthetic pyrethroid and organophosphate products currently in use in the U.S., and is not expected to result in residues above the levels of formic acid naturally occurring in honey. Residues of formic acid are exempt from tolerance requirements. No environmental risk is expected.

I. Description of the Active Ingredient

Formic acid is an irritating pungent liquid at room temperature. Ants are known to produce formic acid, which helps protect them from predators. Some birds take advantage of the ant's chemical defense by placing live ants in their feathers to rid themselves of mites. When used in beehives as directed, the formic acid pesticide product acts by directly killing the mites, while not substantially disrupting bee behavior or life span. Honeybees play a vital role in pollinating agricultural crops, as well as home gardens and ornamentals. However, due to parasitism by varroa and tracheal mites, the numbers of commercial hives and wild honeybees have decreased significantly over the past decade.

II. Use Sites, Target Pests, And Application Methods

- **Use Sites:** Honeybee hives.
- **Target Pests:** Intended to control Tracheal and Varroa mites infesting honey bee colonies.

Application Method: For the currently marketed product: A 1.5 inch spacer rim is placed on the brood chamber (standard Langstroth equipment) to accommodate the Mite-Away II™ pad. Set two 0.5 x 0.5 x 4 inch support sticks on the frame top bars. The Mite-Away II™ is placed in the beehive on the support sticks directly over the brood chamber for a period of 21 days, turning the hive into a temporary fumigation chamber. This product is not intended for use during production of marketable honey. More details for use and placement of the product in the hive are given on the label.

When to Treat: Use Mite-Away II™ as part of an Integrated Pest Management (IPM) program. Treat only if treatment thresholds are exceeded. Treatment period for this product is 21 days. Treatment ends at day 21. When treatment levels are reached, use Mite-Away II™ for single or double brood-chamber, standard Langstroth equipment honeybee hives, honeybee colony covering 6-20 frames. Outside daytime temperature highs should be between 50-79'F at the time of application. Remove pads from the hives in the event of a heat wave (if daily temperature highs exceed 82'F) within the first 7 days of treatment. Store in the original container and follow Precautionary Statements as set out on this label. Resume treatment by replacing the pads in the hives after the end of the heat wave. Do no use if temperature exceeds 82'F during the application period. Temperatures above 82'F during the treatment period may cause excessive damage to the colonies. Failure to remove the pads during a heat wave can cause excessive brood mortality and absconding. Up to 14 days of brood mortality may occur in the initial stage of treatment, with single brood-chamber hives being more susceptible to damage than double brood-chamber hives. Overall colony health is not expected to be affected, with brood rearing returning to normal by the end of treatment. Treatment of smaller colonies than those listed on the label will result in excessive brood mortality and even in colony mortality. Do not treat during honey flow. No honey supers can be on the hive during the 21 day treatment period. **For treatment before honey flow:** Supers may be placed on the hive immediately after the full 21 day treatment period and the spent Mite-Away II™ has been removed. However, allow at least two weeks after the end of treatment before harvesting honey. This ensures that any remaining formic acid has dissipated to naturally occurring background levels. **For treatment after the honey flow:** Remove all honey supers from the hive before starting treatment.

III. Assessing Risks to Human Health

The gel-pack formulation of formic acid is expected to minimize the potential for dermal, eye and inhalation exposure for pesticide applicators. However, because of the corrosive nature of formic acid, and potential for eye, skin, and mucosal irritation, the Agency is requiring stringent precautionary labeling. Exposure and attendant risks are expected to be negligible for applicators when they follow the directions for use, wear the appropriate personal protective equipment and adhere to the restricted entry interval (REI) of 48 hours after treatment and 72 hours in outdoor areas where average annual rainfall is less than 25 inches a year.

EPA has also examined the potential for formic acid residues to appear in honey and beeswax. When the product is used as directed, residues above those found naturally are

not expected. The tolerance exemption for formic acid in honey and beeswax was established in February 1999 (40 CFR 180.1178).

IV. Assessing Risks to the Environment

Formic acid is approved for use as a pesticide solely within honeybee hives. Because of this limited use, the Agency does not expect environmental residues to occur outside the hive.

V. Regulatory Information

Formic acid was originally registered (licensed for sale) as a pesticide active ingredient on January 28, 1999 for the product, FOR-MITE TM (EPA Reg No 61671-3). A second registration was approved on March 31, 2005 for Mite-Away II (EPA Reg No 75710-1). The products mentioned above are the only registered pesticide products containing formic acid as an active ingredient.

VI. Registrant Information

FOR-MITE TM (EPA Reg No 61671-3)
Mann Lake Ltd.,
501 S. 1st Street
Hackensack, MN 56452

Apicure Inc.(EPA Reg No 72839-1)
8 Meader Rd.
Greenwich, NY 12834

Mite-Away II (EPA Reg No 75710-1)
NOD Apiary Products USA Inc.
46763 U.S. Interstate 81
Alexander Bay, NY 13607

VII. Additional Contact Information:

Ombudsman, Biopesticides and Pollution Prevention Division (7511P)
Office of Pesticide Programs

Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460