

EVALUATION – MITE AWAY II

ABSTRACT

Mite-Away and NOD pads have a very low efficacy rate and many problems inherited from Kramer.

1.0 Mite-Away NOD Pads are not new, original, or reliable. In the Mite-Away NOD Proposal (PRDD2004-05) the term “reduction” rather than “control” is used to describe the treatment. These pads are the Canadian version of the now expired German Patent Number 3427330 by Kramer. This design is over 30 years old and banned in some European countries because of its unreliability and its potential to damage and kill colonies.

The Kramer Plates and the Mite-Away pads use the “blast method” principle relying on changes in the external temperature to create a “hot spot” at the top of the hive releasing a blast of acid. This blast causes an overdose. The success of the treatment relies on the bees’ ability to ventilate and bring in enough fresh air to lower the concentration of fumes below a level dangerous to adult bees but still killing the mite.

If the hive is unable to ventilate or the access of fresh air is limited or the hive is too small to ventilate, the bees will abandon the brood and leave the hive. Resultantly, the brood will get chilled and die, queen losses are frequent and losses of entire colonies are not unusual.

Please study the original Mite-Away and Mite-Away II brochures. The only difference between Mite-Away and Mite-Away II is the introduction of limitations by temperature and colony sizes. These limits are an attempt to put the blame of bee, brood, queen, and hive mortality on the beekeeper not on the product.

2.0 Quote from, “DIRECTIONS FOR USE – Supplemental Product Instruction Flyer – Mite-Away II”

Use Mite-Away II™ for single or double brood-chamber, standard Langstroth equipment honeybee colonies, **bees covering 6 - 20 frames**. Outside daytime temperature highs should be between 50 - 79°F at the time of application. It is highly recommended to remove the 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, the period during which most of the formic acid is released from the pads. **Store in the original container and follow the Precautions for safe handling.** Resume treatment by replacing the pads in the hives after the end of the heat wave. **Temperatures above 86°F during the application period may cause excessive damage to the colonies.** Failure to remove the pads during a heat wave may 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 colonies being more susceptible to damage than double brood-chamber colonies. Overall colony health should not be affected, **and brood rearing should be normal by the end of treatment.** **Treatment of smaller hives than recommended (less than 6 frames of bees) may result in excessive brood mortality and even in colony mortality.**

2.1 The 82° Fahrenheit is hardly a heat wave. Even 86°F would be by most considered nice. These temperatures are common throughout North America during the treatment period. Reaching these temperatures means that the beekeeper would have to remove the pads.

The removal of the pad is extremely unpractical. If the beekeeper is a hobbyist at work, how does that beekeeper monitor the temperature in the bee yard and how is this beekeeper able to leave work to go and remove the pads? If the beekeeper is a commercial beekeeper, how will that beekeeper be able to remove pads from 2000 hives? Then the big question is what will the beekeeper do with these pads that are evaporating high concentrations of acid? Further, if the beekeeper devises some method of safely storing these pads, how does the beekeeper put the pads back into the same hives as to not transfer disease?

2.2 The mortality of small hives, that are usually single box colonies, are more of a rule than an exception when using Mite-Away II. The original Kramer Plate and his method required the beekeeper to make half inch round holes in the plastic cover in a particular pattern according the strength and size of the colony and the prevailing weather conditions. This regulation of evaporation and limited adaptability of the Kramer Plate was eliminated by Mite-Away II. Mite-Away II simplified the process by perforating the bag for the beekeeper creating a one-rate evaporation product without any adaptability. This one rate evaporation product does not work on all hives and kills hives that are weak, small, or unable to ventilate properly.

2.3 Evaluation of the Kramer Plate / Mite – Away II can be found on the Swiss Bee Research Center website – link - http://www.apis.admin.ch/en/krankheiten/docs/saeuren/diffaf_e.pdf

Evaluation of Kramer / Mite-Away II can also be found in the American Bee Journal (March 1996, pp 190-192)

3.0 The 1999 North American Data on the efficacy of Mite-Away formic acid treatment shows: Mite-Away pads have a low efficacy of 51-56% (Caledrone 1999, Caledrone and Nasr 1999). This efficacy is insufficient for the control of mites. This research also recommends that the Mite-Away pads should be used as part of an integrated pest management system where the main task of reducing mite levels is left up to man made pesticides. With North American mites now resistant to all known man made pesticides, a higher efficacy from a formic treatment is required.

3.1 The 2004 research in Florida by: Elzen, Patti J., David Westervelt and Raymond Lucas, 2004. *Formic acid treatment for control of Varroa destructor (Mesostigmata: Varroidae) and safety to Apis mellifera (Hymenoptera: Apiadae) under southern United States conditions.* Journal of Economic Entomology, 97: 1509-1512

ABSTRACT:

“The efficacy of a formic acid pad formulation was field tested for control of the honey bee parasitic mite *Varroa destructor* Anderson & Trueman in Florida and Texas. This pad formulation gave $39.8 \pm 11.1\%$ control at the end of a 6-wk treatment period, which did not significantly differ from the initial sample date. Coumaphos treatment provided **poor control** ($38.4 \pm 11.1\%$) over the 6-wk period, confirming reports of coumaphos resistance in the region. Under relatively warm winter conditions in southern Texas, **formic acid caused mortality of developing eggs and brood.** If resistance by *V. destructor* to the two acaricides registered for its control in the United States continues, the formic acid pad could provide an alternative compound to use as part of an integrated pest management approach. **Given the low control seen in this trial, however, modifications of application technology would seem necessary.**”

3.2 The results were so poor that Patti Elzen, for either liability reasons or as a courtesy to the supplier of the pads did not mention or publish the name of the product Mite Away II. You have to go to paragraph 4 to find out that the same product was “evaluated in northern United States climates (Calderone 1999, 2000; Calderone and Nasr 1999).”

3.3 And you have to go to paragraph 6 to find the actual description of the product, “The formic acid treatment consisted of an absorbent pad saturated with 250 mil of 65% formic acid encased with an impermeable plastic sheathing containing regularly spaced holes within the sheathing. Each pad contained 90 holes, and each hole was 0.65 cm in diameter ... (Calderone and Nasr 1999)”

CONCLUSION: Would it not be possible to avoid application method controversy by registering the active material of 65% dilution of technical grade formic acid for use in beehives and leave the application method up to the beekeeper?