

CHARICTERISTICS AND DESCRIPTIONS OF COMMON MITICIDES TREATMENTS

The following pages describe most presently available miticide treatments and include those for:

AFIGUARD

APIVAR

MITE-A-WAY QUICK STRIPS

FORMIC PRO

API LIFE VAR

APISTAN

OXALIC ACID

HOP GUARD II

The information for this summary was obtained from the product package enclosures and the web sites of the products.

This guide is intended for use as a comparison between the varias miticides and is not intended as a complete instructional guide for their use.

PLEASE BE SURE TO REFER TO AND READ CAREFULLY THE INSTUCTION SHEETS
THAT COME WITH THE PRODUCTS.

CHARACTERISTICS AND DESCRIPTIONS OF COMMON MITICIDES TREATMENTS

APIGUARD

- Active ingredient: Thymol in a slow release gel form that is derived from the thyme plant.
- Temperature range: Over 59 degrees F (15 degrees C) and under 100 degrees F.
- Efficacy: about 85 to 95%, on average about 93%. The higher the temperature the more effective it is. Thymol is also effective against the tracheal mite. It is best to use this product in the summer or Fall.
- Treatment duration: Four weeks, 2 weeks for the first tray followed by 2 weeks for the second tray
- Risk to colony: Apiguard is not harmful to the queen, the brood, the bees or the beekeeper. Apiguard should not be used when honey supers are on the hive. Honey supers can be placed on hive immediately after removing the last tray of Apigard.
- Resistance: Mites are not presently resistant to the Apiguard and resistance is not expected
- Ease of application: Apiguard is very easy, safe and quick to use. It is placed on top of the upper brood box
- Extra equipment: A shim (rim or spacer) is placed above the upper super to allow room for the aluminum tray. An empty honey super can be used for this purpose. Close all openings in any spacers.
- Directive: If screened bottom boards are used, the tray should be left in.

Please read the instruction sheet that comes with the product

APIVAR

- Active ingredient: Amitraz
- Effectiveness: Kills up to Approx. 99% of mites in one application
- Honey supers: Cannot be used when honey supers are on the hive
Treatment strips must be removed from hive for at least 14 days before placing supers
- Treatment duration: 42 days (6 weeks) minimum. Must be removed before 56 days maximum
- Timing: Can be used in spring and fall
- Safety: Does not harm the queen, brood or the bees
Use chemical resistant gloves when handling strips
- Dosage: Two Amitraz impregnated strips are used for each brood chamber. Colonies with 2 Brood chambers will require 4 strips.

MITE-AWAY QUICK STRIPS MAQS

Active ingredient: Formic acid

Temperature range: works best when temperature is between 50 and 92 degrees F. (10 to 33 degrees C).

1st day 50-84 degrees, (Max is 85) days 4-7, 50 to 92

The favorable characteristics:

- Treatment duration is only 7 days
- Kills both male & female mites while they are still under the capping as well as those on the adult bees.
- No resistance is expected to develop
- Placing two strips between the brood chambers is easy to do.
- Residual material left after the treatment can be removed by the beekeeper or left for the bees to remove
- Can be used when a nectar flow is in progress and the honey supers are on the hive
- The formic acid does not leave any residue in the beeswax.
- Efficacy is about 95%
- A half dose treatment can be used when only treating a single brood chamber

The unfavorable characteristics

PLEASE MAKE SPECIAL NOTE OF THESE PRECAUTIONS

Dangerous for the beekeeper to handle

Do not breathe the fumes. Use of chemical resistant gloves is highly recommended

Use of a respirator with the appropriate filter element is highly recommended

Use of protective clothing is recommended

If the temperature goes above 92 degrees F, brood mortality and absconding are likely during the first few days of treatment.

Directives:

The screened bottom board is left open (no tray) and the bottom entrance is left fully open.

LEAVE THE ENTRANCE FULLY OPEN and the screened bottom tray is not left in place.

Place the quick strips between the upper and lower supers as shown on the package enclosure.

Bees should have good food reserves prior to treatment and should not be fed during the time the treatment is being applied.

Additional information can be found at the manufacturer's web site www.nodglobal.com

READ AND FOLLOW THE PACKAGE ENCLOSURE DIRECTIONS CAREFULLY WITH ALL TREATMENTS

FORMIC PRO

Active ingredient: Formic Acid

Note: This product is very similar to the MAQS described above. The major difference is that Formic Pro has a 24 month shelf life and the storage temperature is of less concern.

For more information visit the web site at www.nodglobal.com

Temperature range: Outdoor daytime temperature should be between 50 F and 84 F on the day of application. Temperatures above 92 during the first 3 days may cause excessive queen and brood loss.

Honey Supers: Honey supers can be left on the hives during the treatment period.

Efficacy: 83% to 97%

Treatment duration: 1. Apply two strips once and leave on for 14 days or
2. Apply one strip for 10 days and replace with a second strip for 10 more days.

Caution: Open the container outdoors and stay upwind from the fumes. The fumes are very strong and can burn your nose and eyes.

Directives: Do not disturb the colony during the treatment period.

Treating nucs and small colonies with formic acid is not recommended.

API LIFE VAR

- Active ingredients: Thymol , eucalyptus oil, menthol and camphor
- Temperature range: Works best when daytime temperatures are between 60 and 95 degrees
Temperatures below 54 degrees will result in lower effectiveness
Temperatures above 90 degrees may result in increased brood and bee kill
- Treatment duration: 26 to 32 days; Requires 3 applications and four hive openings to complete a treatment.
(1)Insert miticide, (2) replace in 7-10 days, (3)replace again in 7-10 days,
(4) and remove residual after 12 days
- Efficacy: About 95% if treated within the recommended temperatures.
Mite kill results vary significantly with variations in the amount of hive ventilation
- Resistance to miticide: Resistance by the mites to this product has not been found so far
- Honey supers: **Honey supers cannot be on the hive** when treatments are in progress and must be **removed at least one month** before placing honey supers on the hive.
Do not harvest honey from the brood chambers.
- Ventilation of hive: All ventilation holes must be taped shut, the entrance should be reduced and the tray below the bottom board should be in place.
- Special care required: Do not breathe the vapors or handle the product without chemical resistant gloves.
Do not get it in your eyes or on your clothes.
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APISTAN

- Active ingredient: Fluvalinate, a synthetic pyrethroid
- Treatment time: 6 weeks
- Honey supers: Do not use when honey supers are on the hive. There is no withholding period.
- Temperature: Daytime temperature should be at least 50 degrees for best distribution.
- Dosage: Two strips are used in each brood chamber. With two hive bodies, 4 strips are required.
- Consideration: Apistan is one of the first miticides. It has been around for a long time and the mites have built up a resistance to it. If Apistan has not been used in an apiary for several years it may be effective again for a few years.

OXALIC ACID

Active ingredient: Oxalic acid crystals

Oxalic acid has recently been approved for sale as a miticide and can now be purchased through Brushy Mountain Bee Farm.

The favorable characteristics:

It is very effective at killing the phoretic varoa mites living **on** the bees.

It is relatively inexpensive.

It is not soluble in the beeswax comb

If you use the fumigation technique there is no package material to remove after the treatment is over

The treatments do not appear to be harmful to the bees

The unfavorable characteristics:

It is dangerous to handle. Safety glasses and gloves should be worn when using it and the fumes are very harmful to breathe.

It should only be used when there is little or no brood in the colony.

It should not be used when honey supers are on the colony because of contamination of the honey.

It does not kill the mites feeding on the larvae under the cappings. It kills only the phoretic mites.

It requires special equipment to apply, such as a vaporizer, a garden type sprayer or a trickling device.

Treatment duration:

The treatment only takes a few minutes per hive

Techniques:

Vaporization:

Oxalic acid crystals are placed on a vaporizing tool, (a heater) which is inserted into the front of the hive. The heater is connected to a battery and fumes are created in the hive which kills the phoretic mites. This process takes only a few minutes per hive. The front of the hive can be left open but the bottom board should be closed to confine the fumes to the hive. Follow the label instructions to determine the amount of crystals to use. Usually about two or three grams

Acid dribble:

Approx. 35 grams of oxalic acid crystals are dissolved in warm water and when dissolved, an equal amount of sugar is added to arrive at a 1 to 1 ratio. This solution is dribbled between the frames of the hive. A kit for performing this procedure is available from various sources. Follow the package enclosures for the exact procedure.

Oxalic acid spray:

A garden type sprayer is used to dribble the acid solution into the hive between the frames. A considerable amount of care must be taken when using this approach so that over dosing does not occur.

THE PRIMARY PURPOSE OF THIS OVERVIEW IS NOT TO INSTRUCT IN THE TECHNIQUES USED TO APPLY THE CHEMICAL BUT TO PROVIDE A COMPARISON TO MANY OTHER PRODUCTS AND PROCEDURES AVAILABLE. BE SURE TO READ ALL INSTRUCTION SHEETS CAREFULLY BEFORE ATTEMPTING TO FOLLOW THIS APPROACH TO MITE CONTROL.

HOPGUARD II

Notes:

Can be used with the honey supers on the hives

- Two strips are required for each brood chamber. Four strips for a two deep super hive
- The strips are hung between the frames
- The strips dry out and are only effective for a few days and must be replaced with four more strips to continue killing the phoretic mites.
- Favorable characteristics:
- Does not harm the queen, brood or seem to bother the bees.
- Does not leave a residue in the honey
- Easy and safe to use
- No effect on the queen's egg laying ability

Hopguard should only be used to reduce the phoretic mite load temporarily until another treatment can be applied.

WHEN TREATING FOR MITES IT IS BEST TO TREAT ALL OF THE HIVES IN THE APIARY AT THE SAME TIME BECAUSE MITES CAN MOVE FROM HIVE TO HIVE

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