












# 2022 EPA APPROVED COMMERCIAL PRODUCTS FOR VARROA MITE TREATMENTS IN HONEYBEE HIVES



## SYNTHETIC / HARD CHEMICAL TREATMENTS (INSECTICIDES)

PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>Apistan™</b>  <b>Active Ingredient:</b> Tau-fluvalinate (10.3%) (synthetic pyrethroid)  <b>Manufacturer:</b> Vita Europe www.vita-europe.com 	• 2 strips per brood box (or 1 strip per 5 frames of bees)	• The strips should be inserted, spaced apart hanging on different frames fairly centrally in the brood nest where bees will walk over them.	• Leave the strips in the hive for 6-8 weeks.	• Not recommended. remove honey supers before application. • Do not replace honey supers until 14 days after the strips are removed.
	<b>HOW IT KILLS MITES</b> • Manufacturer's Reported Efficacy Rate: 95% • Contact - kills phoretic mites • Slowly released and dispersed throughout the colony by the bees death results from hyperexcitability and nervous exhaustion	<b>RECOMMENDED APPLICATION TIME</b> • Temp Range for Application: Not temperature dependent • Spring: before the first honey flow • Autumn: after the last honey flow • Most effective when brood rearing is lowest	<b>PROS</b> • Not temperature dependent	<b>CONS</b> • Confirmed mite resistance • High residue in comb • Decreased sperm viability in drones • Extremely dangerous to fish and aquatic life. Do not contaminate ponds, waterways or ditches with the strips or empty packaging
PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>Apivar™</b>  <b>Active Ingredient:</b> Amitraz (3.33%) (amidine)  <b>Manufacturer:</b> Veto-Pharma www.veto-pharma.com 	• 2 strips per brood chamber (or 1 strip per 5 frames of bees).	• Strips need to be in the bee cluster, which is also the brood area of the colony.	• 42 days (6 weeks) and then remove within 14 days	• Not recommended. Remove honey supers before application.
	<b>HOW IT KILLS MITES</b> • Manufacturer's Reported Efficacy Rate: 97-99% • Contact - kills phoretic mites • Bees walk on strips & disperse medication. Mites become exposed to medication and results in starvation & paralysis	<b>RECOMMENDED APPLICATION TIME</b> • Temp Range for Application: Not temperature dependent • Spring: before the first honey flow • Autumn: after the last honey flow	<b>PROS</b> • Quick degradation in honey • Low residue in wax • No immediate adverse side effects to bees, brood, or queen • Not temperature dependent	<b>CONS</b> • Mite resistance • Suspected drone sterilization & reduction in queen sperm • Correlation to Nosema spp. infection • High build-up of DMPF in wax causing possible synergism with other insecticides
PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>CheckMite™</b>  <b>Active Ingredient:</b> Coumaphos (10%) (organophosphate)  <b>Manufacturer:</b> Bayer www.animalhealth.bayer.ca/en/bees/checkmite/ 	• One strip for each five combs of bees in each brood box (Langstroth deep frames or equivalent in other sizes).	• Hang the strips in separate spaces between the combs as near the center of the bee/brood cluster as possible. If two deep brood chambers are used for the brood nest, hang strips in both the top and bottom brood chambers.	• Leave the strips in the hive for 42 - 45 days.	• Not recommended. Remove honey supers before application. • Do not replace honey supers until 14 days after the strips are removed.
	<b>HOW IT KILLS MITES</b> • Manufacturer's Reported Efficacy Rate: 92% • Contact - kills phoretic mites • Slowly released and dispersed throughout the colony by the bees act as acetylcholinesterase inhibitors (nerve damage)	<b>RECOMMENDED APPLICATION TIME</b> • Temp Range for Application: Not temperature dependent • Spring: before the first honey flow • Autumn: after the last honey flow • Most effective when brood rearing is lowest • Do not treat more than twice a year for varroa mites or more than four times a year for the small hive beetles.	<b>PROS</b> • Also treats small hive beetles • Not temperature dependent	<b>CONS</b> • Intense odor • Toxic to handle; chemical resistant gloves must be worn when handling strips. • Confirmed mite resistance • High residue in comb • Not recommended for use in colonies that are used as cell builders for producing queens • Queen loss • Extremely dangerous to birds, fish, and aquatic invertebrates. Do not contaminate ponds, waterways or ditches with the strips or empty packaging

## ORGANIC / SOFT CHEMICAL TREATMENTS

PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>Apiguard™</b>  <b>Active Ingredient:</b> Thymol (25%)  <b>Manufacturer:</b> Vita Europe www.vita-europe.com 	• 50 g (1.76 ounce) trays or Apiguard 3 kg (6.6 lb) tub: stir the tub well and use the syringe to apply 50 g Apiguard onto the dosing tray provided	• Gel side up on top of the brood frames. Make sure to leave enough space for the bees to get into the tray (use a spacer or an empty super on top of the brood chamber). • Do not close up hive entrances during treatment. • Close screened bottom boards. • Feeding discouraged so bees can focus on dispersing treatment.	• Repeat after 2 weeks and leave in place for a further 2-4 weeks • The ideal treatment period is 6 weeks in total	• Not recommended. Remove honey supers before application.
	<b>HOW IT KILLS MITES</b> • Manufacturer's reported efficacy rate: 93% • Contact/Evaporation - kills phoretic mites • Gel is dispersed throughout the colony by the bees	<b>RECOMMENDED APPLICATION TIME</b> • Temp Range for Application: External temperature should be above 60°F • Temperatures above 77°F, a treatment using 2 x 25 g (2 x 0.88 oz) or 3 x 25 g (3 x 0.88 oz) can be used effectively. A fourth dose of 25 g (0.88 oz) gel can be applied at these temperatures • Best applied in summer or autumn, outside the period of honey flow	<b>PROS</b> • Effective against chalkbrood and tracheal mites • Low residue • Dosages can be adjusted for weak or small colonies and high temperatures • Toxicity risk: low, when used as directed	<b>CONS</b> • Temperature dependent • Low risk of absconding • Low risk of queen loss • Low risk of supersedure • Low risk of queen laying interference • Can be a skin irritant; wear protective clothing
PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>ApiLifeVar™</b>  <b>Active Ingredient:</b> Thymol (74.09%), Oil of eucalyptus (16%), Menthol (3.73%)  <b>Manufacturer:</b> Veto-pharma www.veto-pharma.com 	• 3 tablets (1.5 bags) to ensure a full treatment.	• Take one of the 2 tablets and break it into 4 pieces. • Open the beehive and set the single pieces of the tablet around the edge of the brood nest on top of the top bars (in the corners of the beehive). • Don't place the product in the center of the beehive or near the brood.	• 1st application: leave 7 to 10 days • 2nd application: leave 7 to 10 days • 3rd application: leave 12 days	• Not recommended. Remove honey supers before application.
	<b>HOW IT KILLS MITES</b> • Manufacturer's reported efficacy rate: 94% • Evaporation - kills phoretic mites	<b>RECOMMENDED APPLICATION TIME</b> • Effective between 64 and 95 degrees (°F) • For best results treat colonies in the late afternoon or evening when the temperature is lower and the bees are in, or returning to the hive.	<b>PROS</b> • Can be effective against tracheal mites	<b>CONS</b> • Temperature dependent • Used at temperatures over 95 degrees Fahrenheit may increase agitation, stress of bees and increase bees and bee brood mortality. • Can be a skin irritant; wear protective clothing
PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>Formic Pro™</b> <b>Active Ingredient:</b> Formic acid (46.7%)  <b>Manufacturer:</b> NOD Apiary Products Ltd. http://nodglobal.com/ 	• Option 1: 2 strips for 14 days • Option 2: 1st strip for 10 days remove and replace with 2nd strip for an additional 10 days. • To help prevent adverse side effects, cluster must cover a minimum of 6 brood frames (approximately 10,000 bees).	• Ventilation requirements: fully open bottom entrance, 0.5" in height and full width of the Langstroth hive. • Close off screen bottom boards for maximum efficacy. • To help prevent excessive bearding, add a box with frames to the top of the hive during treatment. • Do not feed during the treatment period.	• Refer to Dosage above • Allow a minimum of 1 month between applications	• Can be used with honey supers, however, we do not recommend
	<b>HOW IT KILLS MITES</b> • Manufacturer's reported efficacy rate: 90-99% • Evaporation - kills phoretic mites & mites under cappings	<b>RECOMMENDED APPLICATION TIME</b> • Temp Range for Application: Outside daytime 50°F – 84°F on day of application.	<b>PROS</b> • Kills mites under cappings • Low residue • Longer shelf life (24 months) than NOD's Mite Away Quick Strips (MAQs)	<b>CONS</b> • Intense odor • Temperature dependent • High risk of absconding • High risk of queen loss • High risk of supersedure • High risk of queen laying interference • Queen & Brood loss if used during high temps • Caution using on weak or small colonies • Toxic to handle; Chemical resistant gloves must be worn when handling strips.
PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>Hopguard II™</b>  <b>Active Ingredient:</b> Hop beta acids resin (16%)  <b>Manufacturer:</b> Beta Tec www.betatec.com 	• Two insert strips per ten frames	• Strips should be hung between brood frames	• For best results, leave strip in the hive for a minimum of 14 days	• Can be used with honey supers, however, we do not recommend
	<b>HOW IT KILLS MITES</b> • Manufacturer's reported efficacy rate: 92% - 94% (3 consecutive applications) • Contact - kills phoretic mites • Bees walk on strips, chew strips, & disperse medication	<b>RECOMMENDED APPLICATION TIME</b> • Temp Range for Application: Not temperature dependent • Most effective when used during the pre-pollination period (before sealed brood), mid-summer and at the onset of winter brood development • Use 3 consecutive applications during high brood development	<b>PROS</b> • Not temperature dependent • No adverse side effects to bees, brood, or queen • No residue in honey or wax	<b>CONS</b> • Usually 3 consecutive treatments are needed to be effective
PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>MiteAway Quick Strips (MAQS)™</b>  <b>Active Ingredient:</b> Formic acid (46.7%)  <b>Manufacturer:</b> NOD Apiary Products Ltd. http://nodglobal.com/ 	• Option 1: Full dose (1 sachet, 2 strips) on top of one brood box or in between 2 brood boxes • Option 2: 1 strip every 2-6 weeks. • To help prevent adverse side effects, cluster must cover a minimum of 6 brood frames (approximately 10,000 bees).	• Ventilation requirements: fully open bottom entrance, 0.5" in height and full width of the Langstroth hive. • Close off screen bottom boards for maximum efficacy. • To help prevent excessive bearding, add a box with frames to the top of the hive during treatment. • Do not feed during the treatment period.	• 7 days. Allow a minimum of 1 month between applications	• Can be used with honey supers, however, we do not recommend
	<b>HOW IT KILLS MITES</b> • Manufacturer's reported efficacy rate: 90-99% • Evaporation - kills phoretic mites & mites under cappings	<b>RECOMMENDED APPLICATION TIME</b> • Temp Range for Application: Outside daytime 50°F – 85°F on day of application.	<b>PROS</b> • Kills mites under cappings • Low residue	<b>CONS</b> • Intense odor • Temperature dependent • High risk of absconding • High risk of queen loss • High risk of supersedure • High risk of queen laying interference • Queen & Brood loss if used during high temps • Caution using on weak or small colonies • Toxic to handle; Chemical resistant gloves must be worn when handling strips.
PRODUCT	DOSAGE	PROPER PLACEMENT OF MEDICATION	TREATMENT DURATION	USAGE WITH HONEY SUPERS
<b>Oxalic Acid Dihydrate</b>  <b>Active Ingredient:</b> Oxalic acid (100%)  <b>EPA Registration No. 91266-1:</b> USDA, AGRICULTURAL RESEARCH SERVICE, Bee Research Laboratory 10300 Baltimore Avenue, Bldg. 306, Rm. 315 BARC-EAST Beltsville, MD 20705 	<b>Dribble (Solution) Method:</b> • Dissolve 35g of Oxalic Acid Dihydrate in 1 liter of 1:1 sugar water (weight : volume)  <b>Vaporization/Sublimation Method:</b> • 1g Oxalic Acid Dihydrate powder into vaporizer.	<b>Solution Method:</b> • Note: To completely dissolve oxalic acid dihydrate, use warm syrup. With a syringe or an applicator, trickle 5 ml of this solution directly onto the bees in each occupied bee space in each brood box. The maximum is 50ml per colony whether bees are in NUCs, single, or multiple brood chambers. <b>Vaporization/Sublimation Method:</b> • Restricted lower hive entrance. Seal all upper hive entrances and cracks with tape to avoid escape of oxalic acid vapor. Follow the vaporizer manufacturer's directions for use. Insert the vaporizer apparatus through the bottom entrance. Apply heat until all oxalic acid has sublimated.	• Immediate • During high brood production, repeat application 3 consecutive weeks to kill emerging mites	• Not recommended. Remove honey supers before application.
	<b>HOW IT KILLS MITES</b> • Manufacturer's reported efficacy rate: 90-99% • Contact: Dribble (Sugar water method) • Evaporation: Vaporization/Sublimation	<b>RECOMMENDED APPLICATION TIME</b> • Temp range for application: Not temperature dependent • Spring and summer but works best in the fall/winter • Most effective time to treat is when a hive has little to no sealed brood.	<b>PROS</b> • Not temperature dependent	<b>CONS</b> • Continuous multiple treatments can affect the bees severely • Can damage eyes, skin, nose, throat, & lungs. Proper safety equipment required • When dribble method is used in winter, possible ingestion by bees can shorten their lifespan • Vaporization/Sublimation method can possibly scar bees' exoskeletons

• PLEASE RESEARCH EACH MEDICATION THOROUGHLY BEFORE USING. SELECTION & USE OF MEDICATION WILL DEPEND UPON YOUR REGION, YOUR COLONY STRENGTH & HEALTH, YOUR IPM STRATEGY, AND YOUR WEATHER.

• THESE ARE TREATMENTS REGISTERED ON A FEDERAL LEVEL. FOR MORE INFO VISIT [HTTPS://WWW.EPA.GOV/POLLINATOR-PROTECTION/EPA-REGISTERED-PESTICIDE-PRODUCTS-APPROVED-USE-AGAINST-VARROA-MITES-BEE-HIVES](https://www.epa.gov/pollinator-protection/epa-registered-pesticide-products-approved-use-against-varroa-mites-bee-hives)

• BEEKEEPERS SHOULD CHECK WITH THEIR STATE PESTICIDE REGULATORY AGENCIES TO DETERMINE THE REGULATORY STATUS OF THE PRODUCTS IN THEIR INDIVIDUAL STATES. ONLY USE TREATMENTS APPROVED BY FEDERAL AND STATE AGENCIES.

• PLEASE REFER TO MANUFACTURES' WEBSITE, GUIDELINES, AND INSTRUCTIONS FOR UP-TO-DATE INFORMATION AND BEFORE APPLYING TREATMENTS.

• IT IS RECOMMENDED TO ROTATE MEDICATIONS TO PREVENT MITE RESISTANCE & TO FOLLOW A 2-3 YEAR COMB REPLACEMENT SCHEDULE TO PREVENT MEDICATION BUILD-UP IN COMB.

• OFF LABEL OR OFF BRAND USE OF MEDICATIONS AND ACTIVE INGREDIENTS CAN LEAD TO MITE RESISTANCE; HARM TO YOUR BEES, HONEY AND WAX; ENVIRONMENT; OR PERSONAL INJURY.

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