Meet The Varroa Mite…

The Varroa Mite, *Varroa destructor*, is an external parasite that attacks adult and immature stages (brood) of honey bees. These mites weaken bees and can transmit viruses during the feeding process.

Common signs of mite damage include:
1) open or damaged pupal cells;
2) holes in pupal cappings;
3) emerging adult bees with deformed or missing wings; and
4) visible mites on bees/brood.

Unmonitored and unmanaged infestations of Varroa mites will result in colony death. Colonies should be routinely monitored so informed management decisions are made about population level, treatment methods and efficacy. To obtain the best results, incorporate a range of the chemical and cultural Integrated Pest Management (IPM) methods listed in this brochure.

10 Steps To Doing An Alcohol Mite Wash

MATERIALS NEEDED:

- dishpan – minimum 8 quart size
- measuring device – ½ cup
- 50-70% rubbing alcohol – ½ cup
- mite wash jar – pint size with mesh/solid lids, 1/8" hardware cloth

DIRECTIONS:

1. Remove lid then pour alcohol into jar. Then setup open jar, lid, dishpan and measuring cup within reach for easy use.
2. Inspect honey bee colony to remove a single open brood frame with adult bees. Make sure the queen is not on the frame.
3. Swiftly shake adult bees from the selected brood frame into dishpan. Then quickly scoop ½ cup of adult bees (~ 300 total) from the dishpan using measuring cup and place into open jar filled with alcohol.
4. Shake remaining adult live bees from the dishpan back into the honey bee colony.
5. Tightly seal the solid and mesh lids on jar. Then shake jar vigorously for 1-2 minutes to dislodge mites from submerged bees.
6. Let jar sit for 1-2 minutes to allow dislodged mites to settle on bottom.
7. Remove solid jar lid, affix mesh lid, and then tightly re-seal jar leaving only mesh lid.
8. Vigorously shake jar contents to pour the mixture of dead bees, mites and alcohol through the mesh lid into the empty dishpan to remove the mites and alcohol.
9. Sift through the liquid and debris in the dishpan to count the total mites for the colony. If the total number of mites ranges from 3-9, consider treatment options.
10. Discard bees and mites. Reuse alcohol if desired. Wash all materials after use.

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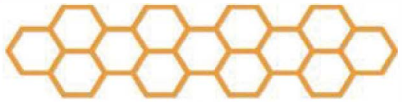
Varroa Mite IPM



Integrated Pest Management (IPM) Options for Varroa Mites

NAME	ACTIVE INGREDIENT [CHEMICAL CLASS]	MODE OF ACTION	APPLICATION MATERIAL	APPLICATION SEASON & TEMPERATURE GUIDELINES	TREATMENT DURATION	KEEP HONEY SUPER ON?	NOTES
Apivar®	amitraz [amidine]	contact	plastic strip	Spring, Fall	42-56 days	no	honey supers put on 14 days after strip removal
Apistan®	tau-fluvalinate [pyrethroid]	contact	plastic strip	Spring, Fall [>50°F]	42-56 days	no	mite resistance shown; honey supers put on after strip removal
CheckMite+®	coumaphos [organophosphate]	contact	plastic strip	Spring, Summer, Fall	42-45 days	no	mite resistance shown; do not use for queen-producing colonies
Apiguard®	thymol	fumigant	gel or gel tray	Spring, Fall [60°F to 105°F]	28-42 days	no	Restricted Entry Interval (REI) of 48hrs; honey supers put on after gel removal
Api Life Var®	thymol, menthol, eucalyptus oil	fumigant	foam wafer	Spring, Summer, Fall [64°F to 95°F]	26-32 days	no	honey supers put on 30 days after tablet removal
Mite-Away Quick Strips® (MAQS)	formic acid	fumigant	gel strip	Spring, Summer, Fall [50°F to 85°F]	7 days or 21 days	yes	penetrates wax cappings; check queen vitality after treatment
Formic Pro®	formic acid	fumigant	gel strip	Spring, Summer, Fall [50°F to 85°F]	14 days or 20 days	yes	penetrates wax cappings; check queen vitality after treatment
Oxalic Acid or Api-Bioxal®	oxalic acid dihydrate	contact, fumigant	crystal or powder as vapor or liquid	Spring, Fall	varies by application type	no	most effective when brood-less; honey supers put on 14 days after treatment
HopGuard®II	potassium salt of hops beta acids	contact	cardboard strip	Spring, Summer, Fall	30 days	yes	most effective when brood-less
Screen Bottom Board	cultural, non-chemical options for management		varies depending on management type	Spring, Summer, Fall, Winter	all year	yes	check mite drop for effectiveness
Drone Brood Trapping/Removal				Spring, Summer, Fall	14-20 days	yes	remove comb/open drone cells before emergence
Brood Interruption/Split				Spring, Summer	14-20 days	yes	split hive or allow to swarm/but capture swarm
Re-Queen/Cage Queen				Spring, Summer	28 days	yes	select mite resistant stock when available

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USDA United States Department of Agriculture

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