



	ApiGuard	ApiLife Var	Hop Guard II	MAQS	Oxalic Acid	ApiVar
Temp. Range	60 F – 80 F	64 F – 95 F	No temp. restrictions	50F – 85/92 F	35 – 55 F	No temp. restrictions
(see additional notes on reverse)	Optimal temp. >59 F max 100 F	Ineffective <45 F		50F – 85F 1 st day 50F–92F days 4–7 Nighttime temps not relevant	Best used when bees are in loose cluster	Bee activity required to spread active ingredient
Treatment	4-6 weeks	26 – 32 days	30 days (min. 14 days)	7 days	Treatment at application	42 days
	Two trays 1st tray: 10-14 days 2 nd tray: 2-4 weeks	One tablet every 7-10 days for 3 applications. Last tablet for 12 days. (8-20 full size frames or equiv.)	2 strips per 8 or 10 frames hung between brood frames	2 gel strips on top bars of bottom brood box. (Cluster must cover 6+ brood frames)	Trickle: Double 50 ml Single 40 ml 5-fr nuc 30 ml Vaporizer: 1g (1/4 t) per brood chamber	2 strips per brood chamber or 1 strip per 5 frames
Delivery	Slow-release gel in aluminum trays placed on top of frames in top box of hive (contact/vapor)	Evaporating vermiculite tablet broken into 4 pieces & placed on top bars at perimeter of brood nest (contact/vapor)	Liquid impregnated corrugated cardboard Mylar backed strips inserted between brood frames (contact)	Polysaccharide biodegradable gel strips placed between brood boxes (fumigant)	Sugar syrup trickle w/ syringe or applicator (contact) or Fumigation per label instructions	Impregnated plastic strips inserted between brood frames (contact)
Honey Supers On / Off	Off	Off	On / Off	On / Off	Off	Off
With-holding	None (not generally used in spring)	4 weeks (not generally used in spring)	N/A	N/A	Vaporization: 15 min.	14 days
Chemical Class	Organic "soft"	Organic "soft"	Organic "soft"	Organic "soft"	Organic "soft"	Synthetic "hard"
Active Ingredient (s)	Essential Oil: thymol	Essential Oils: thymol, menthol, eucalyptus, camphor	Potassium Salt of Hop Beta Acids	Organic Acid: Formic acid	Organic Acid: Oxalic acid dihydrate	Amitraz
Manufact. Info	Vita Limited Vita-europe.com	Chemicals Laif chemicalslaif.it beekeeping.org/ chemicallaif/index.htm	Beta Tec Hop Products Inc. betatechopproducts.com	NOD Apiary Products nodglobal.com miteaway.com	Per Brushy Mtn Bee Farm, see: https://www.youtube.com/watch?v=q4WvPNmS7uc and http://blog.brushymountainbeefarm.com/2015/09/oxalic-acid-faqs.html	Véto-pharma apivar.net

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Notes	<p>85-95% effective (74% - 95% per Bee Informed Partnership). Controls both Varroa & tracheal mites; some chalkbrood. Best used summer or fall, not during honey flow. Screened bottom inserts in during treatment. Use spacer or empty super around gel tray. May cause queen to stop laying. May cause bee mortality if used during high temperatures. May incite robbing of treated hives. Scalable to nucs.</p>	<p>95% effective (70% - 90% per Bee Informed Partnership) Temp range 65 F - 85 F per BIP. Most effective at 65 F. Do not use at temps >90 F. May result in brood & bee mortality. Less effective when avg. daily temps are <54 F. Controls both Varroa & tracheal mites; some chalkbrood. Each package contains 2 tablets. Screened bottom inserts in during treatment. All ventilation holes closed. Entrances reduced. Most effective when less sealed brood present. Do not use during honey flow. Do not apply when bees are robbing. May incite robbing of treated hives. Two treatments per year may be made. Scalable to nucs.</p>	<p>Efficacy undetermined. 80% - 97% per manufacturer with various applications. Max application 3x/year per colony. Most effective during pre-pollination period, mid-summer, and onset of winter brood development. Optimal results when little to no brood present. Some recommend to shake bees off frame before inserting strips to avoid killing bees that come in contact w/ liquid on strip. Wear chemical-resistant gloves. Scalable to packages and nucs.</p>	<p>90-99% effective Kills mites under capped cells. Excessive temps of >92F during first 3 days of treatment may cause brood mortality and queen loss. Not recommended for fall treatment due to potential for queen loss. Wait at least 1-3 days after inspection before applying MAQS. Keep bottom entrance fully open. Bees should have good food reserves before treating. Place an empty honey super above to provide space for bees to expand during treatment. Do not feed bees while treating. Highly corrosive. Must wear respirator, pesticide resistant gloves, & long-sleeve shirt. Strips are biodegradable & can be composted. Does not leave residue in beeswax.</p>	<p>95-99% effective when broodless. Best used in late fall or early spring when little to no brood present. Colony may be manipulated to create broodless condition. Temp. range above freezing & below 55 F. Do not treat weak or starving colonies. Trickle method: Mix liquid fresh. Do not store over one week at room temp or 6 months at 59 F. 35g in 1 liter (≈4 1/4 c) of 1:1 lukewarm sugar syrup (treats 20 col.). Apply 5 mL directly on bees between ea. frame of ea. hive body, 50 mL max per full size 2 chamber colony. Use only once in late fall/winter. Vaporization: 1g per single colony; 2 g per double colony. 2.5 minutes to evaporate. Seal entrance while treating & for 15 min. after treatment. Efficacy may be reduced when applied in cold temps or during high humidity. Follow all label instructions carefully. Must wear respirator & protective clothing. Leaves no residue in beeswax.</p>	<p>Up to 99% effective. (Up to 95% effective per Bee Informed Partnership). If brood cluster moves, reposition strips and leave in hive for additional 14 days. Maximum duration in hive 56 days. Best used in spring before honey flow or autumn once supers have been removed. Do not use during honey flow. May lead to resistance in mites if used improperly. Use no more than 2x per year (some researchers recommend using only once a year). Rotate with chemicals from other classes. Use as part of an IPM program.</p>