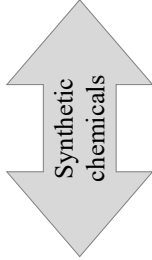
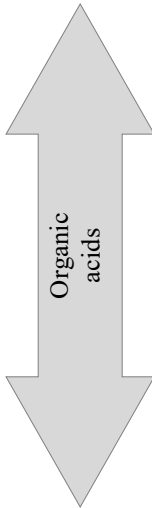
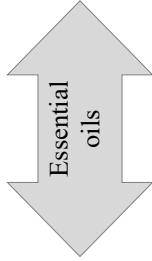




2023 Wisconsin Honey Bee Pest Management Options

The application instructions listed below are only short summaries. **Read the product label thoroughly before applying any treatments and follow label instructions precisely.** The pesticide label is the law. Any listed medications require a Veterinary Feed Directive (VFD) Order or a prescription from a veterinarian. This list may not be complete, and is subject to change. Information in this document does not imply endorsement by the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP), and is provided strictly as an additional resource for honey bee pest management.

| Name of Pest | Registered Treatment (Active Ingredient) | Registration Number | Applications | App. Season & Temps. |
|--|--|--|---|---|
|  Varroa mite <i>Varroa destructor</i> | *Apistan (Tau-fluvalinate) | EPA Reg. No. 2724-406-79671 | 6-8 weeks, apply in spring and fall. No more than 2 strips per brood box. Do NOT use when honey supers are in place, see label. | spring, fall; temps >50°F |
| | *CheckMite+ (Coumaphos) | EPA Reg. No. 11556-138 | 6 week – 45 days, max., apply in spring and fall. Do NOT leave the strips in hive for more than 45 days. Do NOT treat more 2 times per year. Only 2 strips per brood box. Treat all infested colonies within the yard. Can be | spring, fall |
| | *Widespread resistance of Varroa mites to above products. NOT recommended for Varroa mite control in Wisconsin. | | | |
|  Organic acids | ApiVar Strips (Amitraz) | EPA Reg. No. 87243-1 | Use 2 strips per brood box (or 1 strip per 5 frames of bees), hang each in bee cluster with 2 frames between strips. Leave strips inside hive for 42-56 days, max., then remove. 2 treatments per year, max. Do not re-use a strip. Can be used as part of an Integrated Pest Management (IPM) program. Remove strips 2 weeks before honey flow. Do NOT use when honey supers are in place, see label. | spring, fall |
| | HopGuard III (Hop Beta Acids Resin) | EPA Reg. No. 83623-2 | Use 2 strips per brood box (or 1 strip per 5 frames covered with bees). Unfold strips and hang over a center brood frame with 1/2 of the strip on each side of the frame. Leave the strips in the hive for 14 - 30 days, max. Use up to 4 times per year. <i>Can also be used in packages, see label.</i> Can be used as part of an IPM program. Can be used during honey flow, see label. | spring, summer, fall; temps >50°F |
| | Formic Pro (Formic Acid) | EPA Reg. No. 75710-3 | Use 2 strips (staggered) for 14 days (<i>allow a minimum of 1 month between applications</i>); –OR– 1 st strip for 10 days, remove and replace with 2 nd strip for additional 10 days. Lay flat across the top of lower brood box. Do NOT disturb hive. Close screen bottom board, open entrance fully. Can be used as part of an IPM program. Can be used during honey flow, see label. | spring, summer, fall; temps 50°F-85°F |
| | Mite Away Quick Strip (MAQS) (Formic Acid) | EPA Reg. No. 75710-2 | Place 2 strips (staggered) on top of the bottom brood box for 7 days (<i>allow a min. of 1 month between applications</i>); –OR– Apply 1 st strip on day 1, then apply 2 nd strip on day 14, for a total of 21 days. Do NOT disturb hive. Close screen bottom board, open entrance fully. Can be used as part of an IPM program. Can be used during honey flow, see label. | spring, summer, fall; temps 50°F-85°F |
|  Essential oils | Api-Bioxal (Oxalic Acid Dihydrate) | EPA Reg. No. 91266-1-73291 | See label for application instructions. Ensure bees are clustered before applying treatment. Trickle solution or vaporize in the hive late fall or early spring when little or no brood is present. Treat broodless packages/swarms. Can be used as part of an IPM program. Can be used when honey supers are in place. Respirator required, see label. | spring, fall; temps > 37°F |
| | ApiGuard (Thymol) | EPA Reg. No. 79671-1 | Combine weak colonies before treatment. See label for instructions. Place 1 50g tray facing upwards on the top of brood frames. After 2 weeks, remove and add 2 nd tray for 2-4 weeks (4-6 weeks total for entire treatment). Best used late summer/ fall. Use 25mg dose if temps above 77°F. Do not enter or allow others to enter treated area(s) for 48 hours after treatment. Do NOT use when honey supers are in place, see label. | late summer after honey harvest (preferred), fall, spring; temps 60°F-105°F |
| | Api Life Var (Thymol, Oil of eucalyptus, Menthol) | EPA Reg. No. 73291-1 | Break 1 tablet into 4 pieces and place near 4 corners of brood nest. Leave the 1 st tablet 7-10 days. Place 2 nd tablet for an additional 7-10 days. Place 3 rd tablet for 12 days. Close off screen bottom boards. 2 applications per year max. Best if used in fall. Remove from hive at least 30 days before harvesting honey. Use the appropriate respirator when handling tablets. Do NOT use when honey supers are in place, see label. | fall (preferred), spring; temps 64°F-95°F |

Mite products discontinued for use in Wisconsin include: Zoecon Apistan with Anti-Varroa Mite Strip, Sucroicide, Hivastan, and Mite-Away II.

MAQS, ApiLife Var and Apiguard also show some control of **tracheal mites**. Apivar and oxalic acid do not.

Stock Bred for Improved Hygienic Behavior: Queens and packages bred for improved hygienic behavior are available from many producers including Russian, SMR, VSH, MN Hygienic, Purdue “Ankle-Biter”, and Pol-line.

Integrated Pest Management (IPM) – Varroa Mite: No single treatment option is 100% effective. **Check mite levels frequently.** Use a combination of mite resistant stock, drone brood trapping and removal, screen bottom boards, brood interruption, and re-queening when needed. (*See the next page*).

Wisconsin Department of Agriculture, Trade and Consumer Protection

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IPM – Varroa Mite, continued: Rotate “hard” and “soft” controls, and keep records of each treatment type and date. See the EPA’s IPM instructional video [Protecting Honey Bees: Integrated Pest Management for Varroa Mites](#), and NC Department Agriculture’s video [Managing Hive Pests](#) for more about IPM for Varroa mites. Also see the [Honey Bee Health Coalition’s \(HBHC\) Varroa Management Guide](#) for more information.

| Name of Pest | Registered Treatment (Active Ingredient) | Registration Number | Applications | App. Season & Temps. |
|--|---|--|---|------------------------------------|
| The following medications require a Veterinary Feed Directive (VFD) Order or a prescription from a veterinarian. Labels and formulations vary. Consult with your veterinarian. See the DATCP Veterinary Feed Directives webpage for more information. | | | | |
| American Foulbrood (AFB) <i>Paenibacillus larvae</i> and European Foulbrood (EFB) <i>Melissococcus plutonis</i> | TM- (50, 50D, 100, 100D), Tetroxy 25, Pennox 343, Tetroxy 343 (Oxytetracycline hydrochloride) | <i>FDA Reg. No.</i> NADA 008-804 ANADA 200-146 ANADA 200-026 ANADA 200-247 | After consultation with your veterinarian, follow VFD order/ prescription and label precisely. Remove at least 6 weeks prior to honey flow to avoid contamination of production honey. | As needed in early spring or fall. |
| AFB and EFB | Terramycin, Terramycin 100MR Type A (Oxytetracycline dihydrate) | <i>FDA Reg. No.</i> NADA 095-143 | | |
| AFB and EFB | Pennox (55, 100-MR, 100 Hi-Flo, 200-Hi-Flo) (Oxytetracycline) | <i>FDA Reg. No.</i> NADA 138-938 | | |
| AFB (<i>NOT effective for EFB</i>) | Tylan, BiloVet, Tylovet (Tylosin Tartrate) | <i>FDA Reg. No.</i> NADA 013-076 ANADA 200-455 ANADA 200-473 | | |
| AFB (<i>NOT effective for EFB</i>) | Terramycin (-343, soluble powder concentrate) (Oxytetracycline hydrochloride) | <i>FDA Reg. No.</i> NADA 008-622 | | |
| AFB (<i>NOT effective for EFB</i>) | Lincomix (Lincomycin Hydrochloride) | <i>FDA Reg. No.</i> NADA 111-636 | | |

IPM – American Foulbrood (AFB): Inspect hives for symptoms of AFB. If hive(s) are suspected of having AFB, contact DATCP at (608) 224-4629. **Do not use antibiotics on hives positive for AFB. Destroy bees and burn frames with AFB or with AFB symptoms!** Burn or scorch the insides of boxes. Start with new frames and foundation. Treat all other hives in the yard. Quarantine and monitor yard closely for 12-18 months. See the [HBHC’s Managing Foulbrood Guide](#) for more information about AFB and EFB. Also see the [HBHC’s Hive Health Best Management Practices](#).

| Name of Pest | Registered Treatment (Active Ingredient) | Registration Number | Applications | App. Season & Temps. |
|---|---|--|---|----------------------|
| Sacbrood virus (SBV) disease <i>Morator aetatulus</i> virus | No treatment available | <i>N/A</i> | Usually goes away by mid-June. If not, power wash equipment and re-queen hive. | <i>N/A</i> |
| Chalkbrood <i>Ascospaera apis</i> fungus | No treatment available | <i>N/A</i> | Maintain strong colony health. Requeen with a queen bred for hygienic behavior. | <i>N/A</i> |
| Vairimorpha (<i>Nosema</i>) <i>ceranae, V. apis</i> | No FDA approved animal drug available | <i>N/A</i> | Maintain strong colony health. Reduce colony stress. Reduce moisture in hive. Improve air circulation. Requeen. Cull old frames. Control Varroa mite levels with IPM. Provide proper nutrition. Note that <i>V. (Nosema) ceranae</i> has largely replaced <i>V. apis</i> . | <i>N/A</i> |
| Wax moth <i>Achroia grisella, Galleria mellonella</i> | Para-Moth Insecticide (Paradichlorobenzene) | <i>EPA Reg. No.</i> 61671-2 | Use on extracted, stored equipment only. Stack supers on several layers of newspaper, as tightly as possible. No more than 5 deeps or 10 shallow supers per stack. Kills adult wax moth and immature stages, but not eggs. Combs or equipment that have been treated must be thoroughly aired out before use, otherwise bees will be killed, see label. | <i>N/A</i> |
| Small hive beetle (SHB) <i>Aethina tumida</i> | GardStar 40% EC (Permethrin) | <i>EPA Reg. No.</i> 39039-8 | Treats the SHB larval stage. Soil drench only. See label for directions and follow carefully. Cut grass prior to application. Apply 24-48 hours prior to placement of hive support(s) (e.g. pallet(s)). Highly toxic to bees. | <i>N/A</i> |