



Varroa Mites

Biology:

The varroa mite (*Varroa destructor*) is an external parasite of the honey bee. It will infest adults, larvae and pupae. It is visible to the unaided eye. A fertile female mite will enter brood cells, soon to be capped, to reproduce. Each varroa can go through several reproductive cycles and are able to develop resistance to some treatments. Visual symptoms include tattered wings on emerging bees, patchy brood pattern and mites on bees or comb.

Monitoring:

Ether Roll - Place $\frac{1}{2}$ cup of bees (300 bees), from the brood chamber, in a glass jar. Spray with 3 squirts of ether (starter fluid). Replace lid and shake for 1 FULL minute. Roll the jar, then count the varroa stuck to the glass and under the lid. Threshold guidelines are provided below. The levels are given relative to 100 bees, so divide number of mites by 3.

Alcohol Wash - Place $\frac{1}{2}$ cup of bees (300 bees) - a collection from several brood frames in the brood chamber - into a container with alcohol (or windshield washer fluid). Shake for 20-30 minutes. Pour bees onto a screen that will hold the bees but allow the mites through, over a white tub and vigorously rinse varroa from bees with water. Count the total number of varroa in the tub. Threshold guidelines are provided below. The levels are given relative to 100 bees, so divide number of mites by 3.

Contact Medivet Pharmaceuticals Ltd. for an easy-to-use bee yard alcohol varroa shaker.

Sticky Board - Coat a thick piece of paper (filing folders work well) (38 x 30 cm) using 50% Vaseline/50% Crisco, Tangle Trap paste or Sticky Stuff. Place the coated paper under a screen, on the bottom board for 3 days. Count the varroa mites on the sticky board and divide by 3 to obtain an average mite fall per day. Threshold guidelines are provided below.

Uncapping Drone Brood - First, record the amount of drone brood per colony. Uncap and remove larvae/pupae from 100 drone cells and record how many are infested with varroa mites. Compare the level of infestation to the total amount of drone brood in the colony.



Ontario Beekeepers' Association, Technology-Transfer Program
Orchard Park Office Centre, Suite B47, 5420 Highway 6 North, Guelph, Ontario, Canada, N1H 6J2
519-836-3609 obatechtransfer@rogers.com

Sugar Dusting - Place ½ cup of bees (300 bees), from the brood chamber, in a jar. Add 2 tablespoons of powdered sugar and shake gently to coat the bees. Empty bees and all of the sugar onto a flat surface out of the wind and count the varroa mites remaining in the sugar as the bees walk away.

Threshold guidelines for varroa mite levels in May and August.

Treat when varroa levels are \geq the following:

Monitoring Method	Number of Varroa Mites in early May	Number of Varroa Mites in late August
Ether Roll	2/100 bees	1-2/100 bees
Alcohol Wash	3/100 bees	2-3/100 bees
Sticky Board	9/24hr drop	12/24hr drop

Samples in alcohol can also be sent to the diagnostic labs for analysis. Call the labs for mailing directions.

Ontario Honey Bee Diagnostic Labs:

Jim Anderson, Tanglewood Honey Bee Lab Services

RR 1, 35548 Highway 41, Eganville, ON K0J 1T0 (613) 628-2890

Brenda Perrin, Perrin's Bee Lab

RR 2, 284 Country Lane, Cameron, ON K0M 1G0 (705) 359-1505

Available Registered Treatments:

Apistan®

CheckMite+™

Apivar® (under emergency use registration until June 30, 2011)

Thymovar®

Oxalic Acid (late fall treatment, follow up to main treatment)

Drone Trapping/Removal