

# Treatment for Varroa Mites



NCBA Bee School 2020

# Treatment for Varroa Mites?



**YES**

# How, when and what?



- ❧ Mite Counts is your first step!
  - ❧ Sticky boards
  - ❧ Drone brood sampling
  - ❧ Sugar roll – less effective
  - ❧ Alcohol roll – more effective
- ❧ When to count?
  - ❧ Packages – Starting in June
  - ❧ Nucs – Starting in June
  - ❧ Every 3 week or so
  - ❧ Before AND after treatments

# Sticky Board



## ☞ Sticky Boards - plastic inserts

☞ If you use screened bottom boards, sticky boards can easily be used to sample for mites. The drawbacks of using sticky boards are that they are messy, they must be left in the hive for several days, they collect not only dropped mites but also a fair amount of hive trash and it can be very difficult to accurately count the mites stuck. The mite drop varies widely based on the brood rearing activity in the hive. Spray the insert with PAM.

# Drone Sampling



## ☞ Drone Brood Sampling

☞ This method provides for a ready visual inspection but it is hard to draw direct conclusions about the infestation level without sampling at least 100 drone brood cells in the correct stage of development from a number of locations within the brood chamber. During hive inspections we frequently find burr drone comb at the bottom of frames that is pulled apart when the frame is removed. Careful inspection of this opened comb can reveal the presence of mites.

# Drone Sampling



## ☞ Drone Brood Sampling

☞ Varroa prefer drone brood over worker brood by a ratio of 10:1. To sample for mites using an uncapping fork, scrape open a few drone cells. You are looking for drone brood in the pink-eye stage. Push your uncapping fork into a section of cells from the side, skewering 20 or so through their thoraxes, then lift the pupae out of the comb. Tap the frame over a white surface to dislodge any mites remaining in the cells. Hold the exposed pupae over the same white surface and inspect for mites.

# Sugar Roll



- ❧ Less effective than alcohol roll
- ❧ This is a non-destructive method of sampling for mites. This is accomplished by covering a sample of bees with powdered sugar, causing the mites to lose their grip and falling off, assisted by aggressive grooming behavior as bees try to clean themselves up. The mites which drop off are collected and counted.

# Sugar Roll



- ❧ You will need the following:
  - ❧ Mason Jar with 1/8 wire mesh cover
  - ❧ Confectioner sugar
  - ❧ Container to shake bees into (white wash tub is best)
  - ❧ Container of water

# Sugar Roll



☞ Pull a frame of brood from the top box. You want a frame from the center of the brood nest. Open brood is good but not essential. Do not collect the bees for the test from the inner cover, or a honey frame or from the beard hanging on the front of the colony. Inspect the frame for the queen. If you see her place her on another frame. The goal is to get a sample of nurse bees, which are the primary transport vehicle for mites awaiting the opportunity to jump into a cell that is about to be capped.

# Sugar Roll



☞ Vigorously shake the frame over a white wash tub or 5 gallon bucket, knocking as many of the bees as possible into the tub. Wait a couple of minutes to let the older bees fly away. The young nurse bees will not fly. Tip the tub at an angle to slide the bees into a corner. Take a ½ cup measuring cup and scoop through the bees to collect a level ½ cup of bees. This will be about 300 bees. Pour the ½ cup of bees into the mason jar and put the wire mesh lid on the jar.

# Sugar Roll



- ❧ Pour a rounded teaspoon of powdered sugar through the mesh into the jar. Roll the jar until all of the bees are white. Roll for a few seconds more. Then set the jar aside for four minutes.

# Sugar Roll



- ☞ While the jar is sitting, pour water into the wash tub to a depth of about 1 inch. After four minutes invert the jar over the water and gently shake the jar. Continue shaking for a minimum of one minute and as long as you see mites continuing to fall. Once all of the mites are out, open the jar and pour the bees onto the landing board in front of the hive.
- ☞ Count the mites floating in the water.

# Alcohol Wash



⌘ This is perhaps the best method of sampling but it is destructive. The bees will be killed. Proceed as above to collect a ½ cup sample of bees from the brood nest. Fill the mason jar half full of rubbing alcohol. Pour the bees into the jar of alcohol and cap the jar. Vigorously shake the jar for a couple of minutes. Pour the alcohol through the wire mesh onto a coffee filter or clean white cloth (a feed sack dish towel works well). Add more alcohol and repeat until no more mites drop through the mesh. Discard the bees. Count the mites on the filter or cloth.

# Mite Testing Results



## ☞ Interpreting the Counts

☞ For both the alcohol and sugar rolls, divide the number of mites counted by 3 – this yields the percentage infestation rate. For example, if the count is 21 mites, the infestation rate is 7% (21 divided by 3). It is recommended that a hive that tests over 2% be treated. This means a count greater than 4 mites.

# Mite Testing Results



Research has shown that 300 bees is the statistically appropriate number of bees. Any less and the sample is too small to yield an accurate count and little additional precision is gained by sampling more than 300 bees.

# How, when and what?



## ❧ When to Sample?

❧ Sampling during the spring brood build up offers good insight into hive conditions. The varroa population doubles every month beginning in spring so the infestation rate depends on the mite count present when brood production begins in late winter. Though the mite population growth is slower than the brood build up during this time, the infestation rate can easily exceed the 2% threshold in a short number of weeks. Continued sampling throughout the season is recommended.

# How, when and what?



- It is up to the beekeeper to determine when to treat. We now have tools (MAQS®/Formic Pro) than can be used during the nectar flow while honey supers are on the hive, giving us the opportunity to treat during this time if necessary. Other treatments like Api-Life Var® and Apiguard® can only be used once the honey supers have been removed.

# How, when and what?



## ☞ How Many Hives to Sample?

☞ If you have a small bee yard (less than 10 hives) with the hives in close proximity and each hive having the same size brood nest (number of boxes), you will get good results if you sample only one hive. The bees drift among the hives and the mite count is generally consistent from one hive to the next. In larger bee yards or yards where you are running both two and three deep hives sampling more than one hive is recommended. Keep good records and sample different hives each time you sample.

# How, when and what?



## ☞ Following Up After A Treatment

- ☞ It is recommended that you do your mite counts before you treat, obviously, to determine if you need to treat.
- ☞ But more importantly, that you count again as soon as your treatment is over.

# How, when and what?



- ❧ What to do if your mite counts are high?
  - ❧ Treat, treat, treat, treat!
- ❧ Prescribed Treatments
  - ❧ Mite Away Quick Strips/Formic Pro
  - ❧ Apiguard
  - ❧ Api-Life Var
  - ❧ OA Dribble or OA Vaporization (Very Important Instructions to follow)
- ❧ Varroa Mite Groups
  - ❧ Contact your local VMG leader

# OA Vaporization



- ❧ FOLLOW INSTRUCTIONS TO THE LETTER
  - ❧ LABEL IS THE LAW
  - ❧ PRECAUTION - VERY IMPORTANT
  - ❧ Oxalic Acid: Vaporization
    - ❧ Buy Oxalic acid developed for treating honeybees.
    - ❧ Vaporization Method:  $\frac{1}{4}$  tsp per brood chamber
    - ❧ Label is the Law
- ❧ DO NOT USE UNLESS YOU HAVE PROPER EQUIPMENT

# OA Vaporization Equipment



## 3M Dual Cartridge Respirator Assembly 3M 07193, Large

by 3M  
★★★★☆ 905 customer reviews | 136 answered questions

Amazon's Choice for "respirator mask"

Price: **\$17.56** ✓prime | FREE One-Day

Get \$70 off instantly: Pay \$0.00 upon approval for the Amazon Prime Rewards Visa Card.

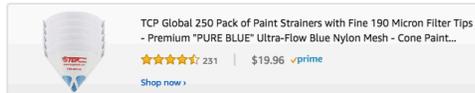
Note: Available at a lower price from other sellers, potentially without free Prime shipping.

Size: EACH

- NIOSH Approved Solvent and Particulate Respirator
- Good for 40 hours of light solvent filtering work and 8 hours of concentrated solvent filtering
- Resealable package
- See more product details

New (43) from \$17.55 & FREE shipping.

Report incorrect product information.



Ad feedback



## DEWALT DPG82-11/DPG82-11CTR Concealer Clear Anti-Fog Dual Mold Safety Goggle

by DEWALT  
★★★★☆ 5,727 customer reviews | 251 answered questions

Amazon's Choice for "safety goggles"

List Price: \$12.99

Price: **\$9.99** ✓prime

You Save: \$3.00 (23%)

Get \$70 off instantly: Pay \$0.00 upon approval for the Amazon Prime Rewards Visa Card.

Note: Available at a lower price from other sellers, potentially without free Prime shipping.

Color: Clear Lens



- Elastic Headband
  - Imported
  - DeWalt tough coat hard coated lens provides tough protection against scratches
  - DeWalt XtraClear anti-fog lens coating provides tough protection against fogging
  - Soft, dual injected rubber conforms to the face to provide a high level protection from dust and debris
  - Adjustable, elastic cloth head strap provides a comfortable fit
  - Ventilation channels allow breathability and added protection against fogging
- ▼ Show more

Compare with similar items

New (39) from \$9.80 & FREE shipping.

Report incorrect product information.

Packaging may reveal contents. Choose Conceal Package at checkout.



3M Organic Vapor/Acid Gas Cartridge 6003/07047 AAD, Respiratory Protection (Pack of 2)

Color: Yellow

