Norfolk County Beekeepers Association

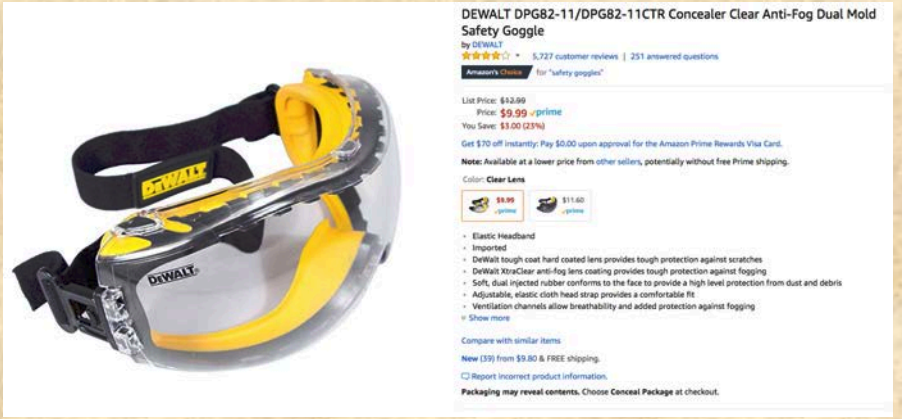
# Fall & Winter Preparation

# Late Summer / Fall Treatments

- Treatment for Varroa Mites
  - Miteaway Quick Strips (7 day treatment)
  - FormicPro;  Option 1: 2 strips for 14 days; Option 2, 1 strip for 10 days, repeat once
  - Oxalic Acid: Vaporization or Drip/Dribble
    - Buy Oxalic acid developed for treating honeybees.
    - Dribble Method: Dissolve Oxalic Acid in one liter of 1:1 sugar syrup solution
    - Vaporization Method: ¼ tsp per brood chamber
    - Label is the Law

# Oxalic Acid Vaporization

- DO NOT USE unless you have the correct equipment.


# Mite Counting

- Sugar roll. This is the method I have always used. If you start early in the season and give yourself a baseline, then you watch your mite counts and take necessary action when needed.
- Other methods:
  - Screen bottom board drops
  - Alcohol wash

# Powder Sugar Roll For Varroa Mites on Honey Bees.

University of Minnesota Instructional Poster #155, Gary S. Reuter and Marla Spivak, Department of Entomology

To keep your honey bee colonies healthy, it is important to determine the level of varroa mites in your colonies. This method provides a good estimate of the number of varroa mites on the adult bees. This method has the advantage of not killing the bees.


1. The first step is to make a container with a cover made of 8x8 hardware cloth. An easy method is to use a wide-mouth canning jar. Use a ring type cover. Cut a circle of 8x8 hardware cloth the size of the cover that fits in the ring and use it instead of the cover.


2. You will also need something white to shake the mites and powdered sugar into. You can just shake them onto a piece of paper if it is not windy. A white container works best but any light color (yellow) would be ok.


3. Shake about 200-400 bees into the container. You can see we shake the bees from a frame into a bent piece of sheet metal (flashing) to help pour them into the container.


4. 1 fluid oz. = approximately 100 bees. 1/4 cup = approximately 200 bees. You will have to shake the bees in, then tap the bottom of the container to get all the bees on the bottom of the container to measure them.


5. With the bees in the container place the 8x8 screen on top and secure.


6. Put about 2 Tablespoons of powdered sugar into container.
Shake the bees with the powdered sugar until they are well coated. Let the container sit for about 1-2 minutes.


7. Tip the container upside down over the white container and shake the powdered sugar and mites out through the screen.


8. Continue to shake for at least one minute to be sure you have all of the mites.


9. Count the number of mites in the powdered sugar. If you have trouble seeing them you can add a small amount of water to dissolve the sugar, making the mites easier to see.


10. This is what the mites look like that you are trying to see.


11. Return the bees to their colony.


12. The bees will survive. Once they are cleaned up they can go back to work.

If you know how many bees were in your sample, you can estimate the number of mites per 100 bees. If there is brood in the colony when you sample, you should double this number to factor in the amount of mites in worker brood. For example, if there are 5 mites / 100 bees, the total infestation is probably 10 mites/100 bees. If your colony has over 10-12 mites/100 bees, you should consider treatment.

# Sampling Colonies for *Varroa destructor*

## An extremely important tool for gaining control of Varroa mites!

University of Minnesota Instructional Poster #168, Katie Lee, Gary S. Reuter, and Marla Spivak Department of Entomology
www.BeeLab.umn.edu

**WHY SAMPLE in a standard way?**

- Be informed: know thy enemy
- Decrease use of miticides
- Reduce chemical residues in hive
- Save time and money
- Develop regional treatment thresholds
- Breed queens from colonies with low mites

1. **Sampling a Colony:** Sample 300 adult bees from one frame containing brood (eggs, larvae or pupae).

2. 300 bees occupy a volume of 0.42 cup or 100 ml. Be careful! Bees are small, so small changes in volume leads to large changes in the number of bees (i.e. 0.33 cup = 200 bees, and 0.5 cup = 400 bees).

3. To make your own cup, add 0.42 cups or 100 ml of water to a cup. Mark a line at the water. 0.42 cups = 1/3 cup + 1 tbsp +1 1/14 tsp .

4. Use one of 3 methods to collect bees: Method 1: Rap a brood frame into a wash-bin bucket. Use your cup to scoop out 300 bees. Rap cup on a hard surface to be sure the bees are at the marked line. Add or subtract bees as needed.

5. Method 2: If your cup is rectangular, run the cup gently down the backs of the bees, causing them to tumble into the cup. Rap the cup on a hard surface to be sure the volume of bees is at the marked line.

6. Method 3: Use the divice called "Gizmo" to sample. It is available from the Walter T Kelly Beekeeping Company or you can build it using the plans online (www.BeeLab.umn.edu).

7. Gizmo has a volume built in to measure 300 bees. Out of the three methods, Gizmo is most accurate, but the other two methods can work as well if the bees are consistantly at the marked line.

8. Once the bees are measured, you can use powdered sugar to dislodge the mites. First, dump the 300 bees into a jar with a size 8 hardware mesh cover.

9. Add about 2 Tbsp (one hive tool scoop) of powdered sugar. Add more sugar if the bees are not coated in white. **Let the bees set for at least one minute in the shade**. Don't hurry this!

10. Shake the jar into a white dish for one minute to dislodge mites from bees. Shake HARD. It is important to remove as many mites as possible. Replace the sugar-coated bees bees in the colony where they will be cleaned.

11. Add enough water to the dish to dissolve the sugar. Count the mites. This is **mites per 300 bees**. The mites will be regular-shaped reddish-brown ovals. You can sometimes see their legs kicking.

12. **Sampling an Apiary**: Sample a total of eight colonies using using one of the methods described above. Sample every fifth colony – loop back if need be.

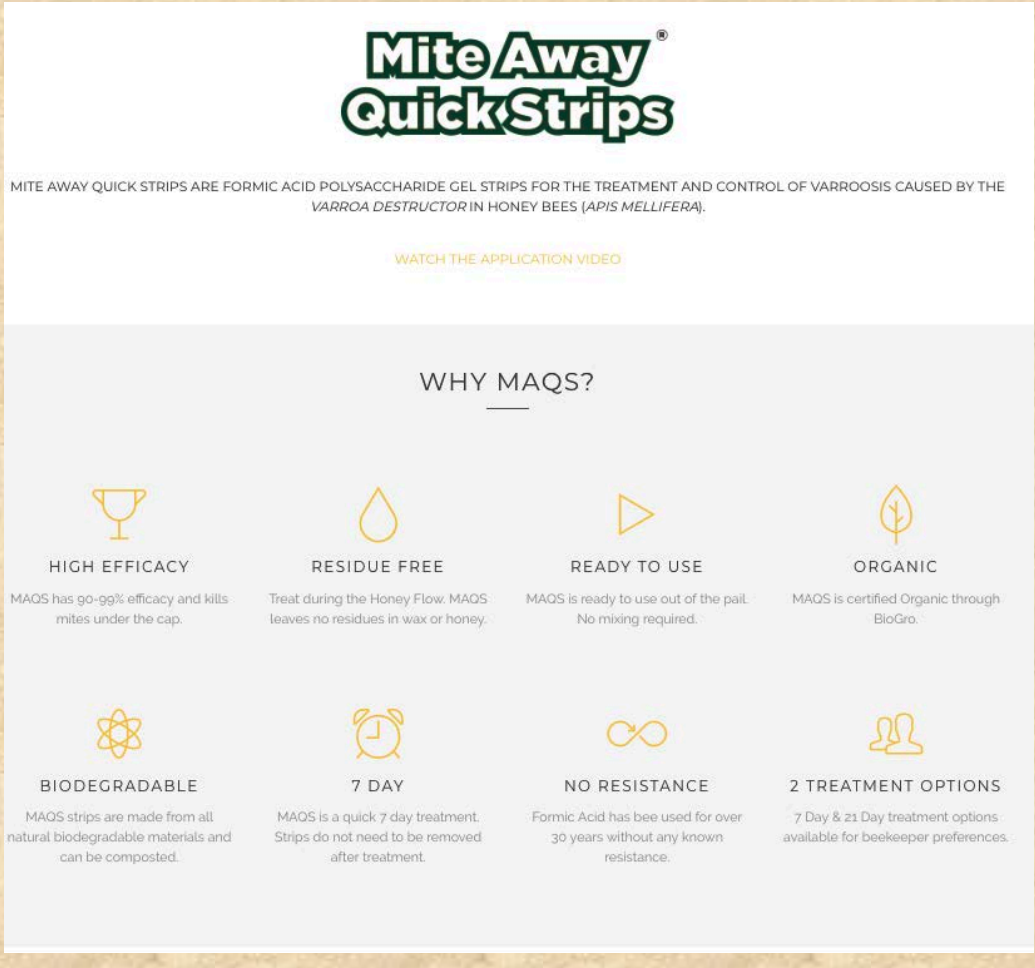
| #Mites per 300 adult bees | Colony infestation | #Mites per 8 300 adult bee samples | Apiary infestation |
|---|---|---|---|
| 1 | 1% | 8 | 1% |
| 3 | 2% | 24 | 2% |
| 5 | 3% | 40 | 3% |
| 7 | 5% | 56 | 5% |
| 9 | 6% | 72 | 6% |
| 11 | 7% | 88 | 7% |
| 13 | 9% | 104 | 9% |
| 15 | 10% | 120 | 10% |
| 17 | 11% | 136 | 11% |

13. **Calculate:** Convert **mites per 300 bees** to percent infestation of the whole colony (mites on adults plus those hidden in pupae) by using this conversion chart or formula [(**mites per 300 bees** ÷ 3) × 2]. For example, if you find 15 mites in your test sample, then (15 ÷ 3) x 2 = 10% total mite infestation.

If you are a hobby beekeeper, consider treating at a 10-12% mite infestation. If you are a commercial beekeeper, you may want to use a lower threshold.

For more information on how this sampling procedure was derived and treatment thresholds, please read the article in American Bee Journal, December 2010, or in J. Economic Entomology, 2010; vol 103 (4): pp. 1039-1050.

# Mite Away Quick Strips



# Formic Pro


FORMICPRO
FOR TREATMENT OF VARROOSIS
CAUSED BY VARROA DESTRUCTOR IN HONEY BEES (APIS MELLIFERA)
FORMIC PRO™ causes mortality to both male and female varroa under the brood cap as well as to the varroa on the adult bees. FORMIC PRO™ is to be used as part of an integrated pest management (IPM) program.
FORMIC PRO is an extended shelf life formulation (24-months) and doesn't require any temperature controlled storage.
WHY FORMIC PRO?
HIGH EFFICACY
Formic Pro has an 83-97% efficacy and kills mites under the cap.
RESIDUE FREE
Treat during the Honey Flow. Formic Pro leaves no residues in wax or honey.
READY TO USE
Formic Pro is ready to use out of the pail. No mixing required.
NATURAL
Formic Pro is made from all natural RAW materials.
BIODEGRADABLE
Formic Pro strips are made from all natural biodegradable materials and can be composted.
QUICK OPTIONS
There are two treatment options when local thresholds are met: Option One: 2 strips for 14 days. Option Two: 1st strip for 10 days remove and replace with 2nd strip for an additional 10 days.
NO RESISTANCE
Formic Acid has been used for over 30 years without any known resistance.
EXTENDED SHELF LIFE
Formic Pro has a 24 month (2 year) shelf life.

# Treatment for Nosema

- Nosema disease in honey bees is caused by the protozoa spore nosema apis that infects the epithelial cells of the bees' ventricles. Nosema ceranae is another type of nosema discovered in bees in our region recently, and it is believed that this may play a role in the heavy losses that many beekeepers have experienced.

- Fumagilin-, an antibiotic registered for the treatment of nosema infection in honey bees, is the recommended method of control. Fumagilin-B works by attacking the actively multiplying disease-producing parasites in the bee's digestive tract.

- Fumagilin-B should be fed only in sugar syrup.

- Medicated syrup should be fed in the fall after the honey supers have been removed. This fall feeding is very important to protect bees during the winter season, when they're cooped up in the hive.

- Mix 1 rounded teaspoon of Fumagilin-B into 4 ounces of warm water (38-49°C or 100-120°F), and stir this into 4 liters (1 US gallon) of sugar syrup until it has dissolved. One 454g bottle of Fumagilin-B will usually be enough to treat 50 colonies.

# Late Summer/Fall/Late Fall

- Feeding bees – If August treatment for mites, start feeding 9/1 (1:1) for one week, then switch to 2:1.
- Make sure bees are capping sugar syrup (uncapped honey is not good)
- If putting supers on for fall nectar flow, pull supers around 9/15-9/21 and start feeding 2:1
- Note: Each gallon of syrup fed increases reserves by about 7 lbs.
- 1:1 = 5 lbs of sugar/ 10 cups water: 2:1 = 10 lbs of sugar to 10 cups water
  - (Don't freak out about an exact recipe for sugar syrup. They bees won't mind.

# Winterizing

- Take off sugar syrup feeding by October 15
- Put in bottom board inserts, mouse guards (9/1), put up wind shields, clean out screen bottom board, clean up area around hive. Do not plug 5/8” hole.
- You will need a shim and a winterizing board (homasote) for fall preparation.
- Use a ½ - 1 inch shim above brood chamber, below inner cover. This is where you will place fondant for feeding. Shim can have slats or dowels to place the fondant on.
- Please winterizing board, above inner cover, below outer cover.
- Wrap hives: Cozy, insulation boards, etc.

# Bee Cozy

# Winter

- Check hives when weather permits (Above 40). Lift up cover slightly and shims, check for location of bees; If near top then time to put on fondant (timing is important). You should have enough honey stores to see you through December and into January and February. BUT YOU HAVE TO CHECK.
- Queen starts laying late January. Think about putting small amounts of pollen patties on.
- Make sure the hive stays dry. Cold won't generally kill the bees, but moisture will. SO WILL MITES.
- If you don't treat your hives will die.

# Early Spring

- Crucial that you check your hives weekly. Bees can starve to death at this point. The population will start to increase slowly.
- Consider adding pollen patties, but timing is very important. You don't want to encourage the queen to lay too much. Pollen will encourage brood rearing.
- Start spring sugar syrup feed 1:1 late March/ early April (sooner if weather is warm) or feed frames of honey.

# Other things to remember

- Winter is a good time to order new equipment
- Clean and repair old equipment
- Store honey supers in cool, dry place protected from moths and mice
- Read all those bee magazines you couldn't get to during the summer
- Attend club meetings

# Fondant Recipes

- Fondant bee candy can be fed directly to the bees once cooled. It can be stored in the freezer in plastic bags. It is also common to use this recipe in small quantities to plug the hole on a Queen Cage.

- Ingredients: 10 pounds sugar, 4 cups water
- Directions: Mix in sturdy flat bottom sauce pan. Heat to 242°F while stirring constantly – this mix will be boiling for about 5 to 8 minutes before it reaches 242°F . Take if off the heat and let it sit for about 10 minutes to start the cooling process. You then must start stirring until it starts to cool. This will take about 20 minutes It will get whitish in color and thicken up. Once this happens, then you can pour onto paper plates. Don't wait too long or you will not be able to pour it and get it to the thickness that you need to put in the the shims. (1/4). When ready to feed, remove paper, break in half and place both halves over top bars, add a ¾'' shim and replace inner cover, etc.
- Makes about 10 paper plates.
- It is good to break them into a few pieces. The bees like to eat from the edges.

# Fall Sugar Syrup

- You should be feeding your bees sugar syrup in a 2 to 1 ratio at this time.

- Ingredients:
- 10 lbs. of sugar
- 10 cups of water
- Healthy Bee (essential oils), Bee Tea, Salt (Optional)

- Directions: Boil water, turn off heat and put in sugar. Stir until dissolved. The once it cools you can add the other optional ingredients.  Remember to turn off the heat.