

SUGAR SHAKE

Varroa Mite Monitoring Method

Varroa Mite Monitoring is a very important step in evaluating whether your colony is below or above the threshold for treatment. It is suggested that you sample your colonies at least quarterly, more if you're in a year-round climate.

Depending on what phase of the population cycle your colony is in, the threshold may vary:

Table 1: Treatment Thresholds by Phase;(%=Number of mites/100 adult bees)

Colony Phase	Acceptable Further control not needed	Danger Control promptly
Dormant with brood	<1%	>2%
Dormant without brood	<1%	>3%
Population Increase	<1%	>2-3%
Peak Population	<2%	>3%
Population Decrease	<2%	>2-3%

[*https://honeybeehealthcoalition.org/varroatool/](https://honeybeehealthcoalition.org/varroatool/)

With this suggested How-To Sampling Method, you are collecting 300 bees to sample (equivalent to ½ cup). So for example if you are sampling during Peak Population (Spring Season or heavy nectar flow in your area) and count 9+ mites, you definitely want to treat.

Mite Count Per 300 Bees	Mite Load
3	1%
6	2%
9	3%

Things you will need:

- 1 wide mouth Mason Jar (w/ solid lid) marked at ½ cup
- #8 hardware screen to make a second Lid
- Plate
- Powdered Sugar - 2 tbsp. per sample
- Spray Bottle of Water

Number of mites ÷ number of bees
= mite level (.xx) = X%

If you have 10 or fewer colonies, you should sample all colonies!

Step 1: Collect 300 bees (about a half cup) from a brood frame into the jar

- You can do this by running the Mason jar along the frame or by shaking the frame into a 5 gal bucket and taking a ½ cup scoop of bees.
- MAKE SURE THE QUEEN IS NOT ON THE FRAME

Step 2: Add 2 tbsp of powdered sugar to jar and cap the jar with the screen lid.

Step 3: Shake and roll the jar for 1 minute to thoroughly coat the bees in sugar

Step 4: Wait 3-5 minutes to allow mites to dislodge from bees due to increase in temperature.

Step 5: Shake on to plate. (Can add another 1 tbsp to really be thorough). Must redo Steps 2-4 if you add more!

Step 6: Spray plate with water to dissolve sugar and count the mites

Step 7: Return the bees to the hive

Step 8: Count the mites and calculate the colony mite load. Decide if the mite load is below or above the acceptable threshold for their population phase and whether you need to treat or not.

*The Sugar Shake method is not generally recommended in high humidity locations due to clumping of sugar and it's decreased effectiveness.

Great step by step video on how to sample: <https://www.youtube.com/watch?v=lqPft9FQxLc>