

Stahlman Beekeeping Notes For 2022

Varroa Mites



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This coming week may be the most important week in the life of a hive of bees. Weather conditions in many parts of the U.S. are extreme. It may be uncomfortable for humans, but consider a hive of honey bees.

As nectar producing plants are ending their growth cycle (Many plants have limited flower producing periods) the bees are finding a shortage of food gathering opportunities. I visited my bees this week and found the following:

- Queens are reducing egg laying. There is still a large population of bees eating up honey stores.
- They are not storing any honey reserves. I do see some pollen being brought back to the hive which indicates they may be finding just enough food to stay alive and feed some new larva.
- Varroa mite populations are growing. I am at a loss of telling anyone what to do about managing bees for Varroa control. I have tried a number of different products over the last 20 years and still am lucky to have 50% of my bees survive the winter season. (Conditions for increased population growth of Varroa mites is taking place now)
- Robbing is as bad as it can possibly get. (This is an ideal time for the spread of disease)

What am I doing?

(Some areas of the country are fortunate to have plants in bloom. Even in North Carolina the mountain regions are getting a good sourwood honey flow. However all honey flows end at some point. Almost all the bee literature I read report that location, location, location means everything to bee survival. Some beekeepers are more fortunate than others to live in an area that support continued nectar supplies for bees and honey harvest.

- I have checked my hives and they are bone dry. So I have begun to provide both sugar syrup and pollen patties for my bees.
- I have ended any attempt to make splits and raise queens.

And I am working on controlling my Varroa mite populations.

- **Last year I used Formic Pro with little success. I followed label directions.**
- **Maybe this year I will try Oxalic Acid. Check out Randy Oliver Varroa research.**
- **I did try to spread out my hives so they are not so close together.**
- **I have also tried some brood interruption to reduce Varroa mite population growth.**

In the past I have used: Apiguard, Mite Away Quick Strips, Hop Guard, Apivar, and other products that use formic acid, Amitraz, Oxalic acid as a drip, Fluvalinate, and Coumaphos.

None of these I could say solved the issue with Varroa mites. But I am still trying!

Detecting Varroa mites is important:

The quickest way I have found is the sugar roll test. All it takes is a pint jar with a screened lid and a white paper plate. Scoop up about 300 worker bees into the jar, put a table spoon of powdered sugar in the jar thru the screened lid and shake the jar so all the bees are covered with sugar powder. Turn the jar upside down over the white paper plate and continue to shake. Powder sugar and Varroa mites will drop thru the screen. If Varroa mites are present they will be easy to see. In my opinion the number of mites is important! More than 5 requires treatment now!

My very first contact with mites came in the late 1980's. Along with most beekeepers at that time, we were shocked to find our hives suddenly dying. We faced a mite called Tracheal mites which appeared before Varroa. The appearance of these mites changed beekeeping management up to the present time.

Currently not much is mentioned about tracheal mites because most bees built up a resistance to them. Bee samples were taken by bee inspectors and sent to the Beltsville bee laboratory. The results from the samples were then sent to state inspectors and the beekeeper. Tracheal mites could only be seen under microscopic examination.

Today our concern is with Varroa mites. I am at a loss to tell you how to control them! They are every where and it is unusual to find any sample of bees without finding Varroa mites present.

Currently, Australia has found Varroa mites there. The government is considering a number of ways to control the spread to other parts of the country. It reminds me of our first attempts to control its spread. When first detected in the U.S. in 1987 in Wisconsin* of all places, Mexico and Canada closed their borders to U.S. bees. The Varroa mites were traced back to a package bee producer in Florida. By that time package bees had been delivered to many beekeepers located in many states. This spread of Varroa mites almost devastated the

package bee business in the South. I remember Fred Rossman telling me that it was a hard time for anyone selling package bees at that time.

Talk included burning hives found with Varroa or Tracheal mites. States considered preventing bee movement from any state with mites. The problem -- by that time Varroa mites were being found in most states. Bees were being moved by beekeepers for pollination and spread all across the U.S.

The biology of Varroa mites: Copied from internet search Credit for this information is from: <https://extension.psu.edu/methods-to-control-varroa-mites-an-integrated-pest-management-approach> this is a great resource location for bee information

Varroa mites reproduce in the capped cells of developing honey bees. Because of the slower development of drones, Varroa mites preferentially infest drone cells.

Varroa mites are believed to feed from the fat bodies of the bees, which is an organ that provides the energy needed during extended non-foraging periods, such as the winter. In addition to weakening the bees' metabolism, Varroa mites transmit a number of lethal viruses. Viral titers in honey bees are correlated with Varroa mite load, with both rising from spring to fall. Thus, the control of the mite population is a method of controlling viruses. In beekeeping operations, timing of mite control is critical; controlling mites in the fall is a major factor linked to overwintering survival in honey bees.

Monitoring levels of Varroa mites in colonies is important for determining the need for and the type of treatment. Beekeepers generally measure the mean abundance of mites (number of mites per 100 bees) on a regular schedule, such as monthly, to determine when the population of mites found on adult worker bees is exceeding a threshold. This can be accomplished through several methods including sugar rolls, alcohol washes, or through the use of a sticky board. Alcohol washes are the most accurate method for monitoring mite populations, for apiaries with a large number of colonies sampling 20% of the colonies will provide sufficient information about mite populations. Economic or action thresholds vary but are aimed at keeping mite levels below or around a mean abundance of 2 mites per 100 bees. This is a very low number, which can be maintained using a number of practices that vary from cultural to chemical (Figure 3). Beekeepers can use an integrated pest management approach in which they use several different mite control techniques in combination or in rotation throughout the year. A combination of various treatment protocols is effective and it reduces the likelihood that resistance to chemicals will develop, as happens when only one treatment method is used repeatedly.