

GROWERTALKS

Growers Talk Business

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Learning on the Fly ... About the Bees

Gary Mangum



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For the past several years, I've tried to share things we've learned at Bell related to pollinators and, particularly, bees. This year was more action packed than any thus far and what we've learned has been very interesting, at least to me.

For background, three years ago we discontinued the use of neonicotinoids at all of our facilities. This wasn't done as a result of the limited (and biased) scientific research published at the time. Instead, we felt there was value in a serious trial that would help us, and the industry, understand the potential challenges involved in removing neonics from "the toolbox" if regulations got to that point.

Over the course of the last three years, our growers have thrown away some plants that didn't respond to alternatives, we ruined tens of thousands of geraniums the first spring based on alternative treatments, we've delayed flowering in thousands of combination hanging baskets and we've substantially increased our use of biological controls. Our use of pesticides had been declining over the past 10 years as our scouting investment significantly increased and growing practices have been positively influenced by research and technology.

At this point we've made the adjustments to produce neonic-free, with a likely impact on production costs hovering around a 3% to 5% premium. My overriding personal concern about going down this path is that we've done so based on the unsubstantiated PR efforts of others. Our hope is for a conclusive review, which is underway at EPA, and that the agency will not be influenced by outside pressures.

To further our understanding of the issues facing pollinators, specifically honey bees, we started keeping bees last spring. The hives are maintained on a property in the midst of the Patuxent River watershed—very rural. There are no active farms, golf courses, etc. in close proximity. It's a "Four Seasons" location for bees and no neonics are on the property. In a year that Maryland beekeepers reported losses of 44%, we lost 100% of our hives and with much outside help and expertise, we know why.

We almost immediately dealt with hive beetles and shortly after those came the wax moths. After defending our hives from those two pests, Varroa destructor makes its appearance. Varroa mites are an external parasite that literally sucks the life out of bees—for an equitable comparison, think of a grapefruit-sized parasite on the back of your neck. Additionally, they are a vector for Deformed Wing Virus (DWV) that will inhibit or prevent the bee's ability to fly, thus no food.

Our University of Maryland students that help maintain our bees weekly were overly cautious the first year, didn't treat early enough, and decided to treat at lower rates than the label called for—all things that happen with many small-scale beekeepers. We learned at a major pollinator conference that some beekeepers have moved away from using chemicals of any sort—there's no doubt losses will continue to increase as more generations of brood are impacted. Eighty percent of our hives were lost going into the winter and the remaining 20%, substantially weakened by the Varroa mite, didn't make it past February of this year.

In an effort to learn all we could about any potential chemical interactions with the bees, we sent samples of beeswax from the hives to the USDA AMS National Science Laboratories in North Carolina to test for 174 agricultural chemicals in parts per billion. No traces of neonicotinoids or chemicals used in or outside of the greenhouses were detected. Interestingly, two hives showed minor traces of two different chemicals—neither of which are kept on our property. While we're still trying to determine how our bees could have come into contact with these chemicals, it furthers the point that despite the best efforts of the beekeeper, outside influences can play a role in the beekeeping experience.

In 2016, we doubled the number of hives to have a broader sampling of data. There's been no detection of small hive beetle or wax moths to this point; however, a test for Varroa mites in early August showed the onset in almost all hives. We began treating aggressively with formic acid and will test again this fall.

A few weeks ago, we met with the State Apiarist. The consistent message was that there are so many variables in beekeeping, it's impossible to point to just one culprit for bee decline. There are many issues with the queens—weather, if they stop laying, their strength—issues with the brood and genetics; weather conditions and food supply/starvation; lack of education or beekeepers too busy to manage hives; and one of the biggest, Varroa mites. As was said, "There is no definitive test for colony decline."

And so the learning goes on. **GT**

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