NYS BEEKEEPER TECH TEAM

2020 Spring Honey Bee Health Report

In June 2020, the NYS Beekeeper Tech Team inspected and sampled 227 colonies from 25 operations across New York State. The colonies are managed by 9 hobby beekeepers (that own 0-49 colonies), 8 sideliner beekeepers (50-299 colonies), and 8 commercial beekeepers (300+ colonies). The University of Maryland quantified *Varroa* and *Nosema* levels. This document reports the status of colony health in spring.

Spring conditions

Participating beekeepers experienced good average overwintering success (estimated at 22%), and so entered spring with good colony numbers. In many parts of NYS, March and early April were mild and bees were active. Abundant incoming pollen supported early colony build up, and then a cold snap in May delayed spring beekeeping tasks. When warm weather finally resumed at the end of May, many colonies were very strong and preparing to swarm. While sampling, the Tech Team observed two major trends: 1) colonies generally appeared strong and healthy, and 2) many colonies were swarming! More than 11% of colonies inspected had either just swarmed or were preparing to swarm. Based on these observations, the outlook for colony health this summer is good.

Varroa

Similar to previous years, *Varroa* mite populations were generally low in June. Colonies sampled by the Tech Team averaged 1.59 mites per 100 bees (Figure 1a), with roughly 1 in 5 of those colonies exceeding the recommended treatment threshold of 2 mites per 100 bees (Figure 1b). A mere 2 colonies of the 227 sampled showed signs of parasitic mite syndrome, an advanced stage of combined *Varroa* infestation and viral infection. Sideliner beekeepers had the lowest average *Varroa* populations at 1.04 mites per 100 bees, while

hobbyist beekeepers had the highest average *Varroa* populations at 3.25 mites per 100 bees. Beekeepers are strongly encouraged to monitor colonies monthly and to apply a registered treatment every time their mites reach or exceed this threshold.

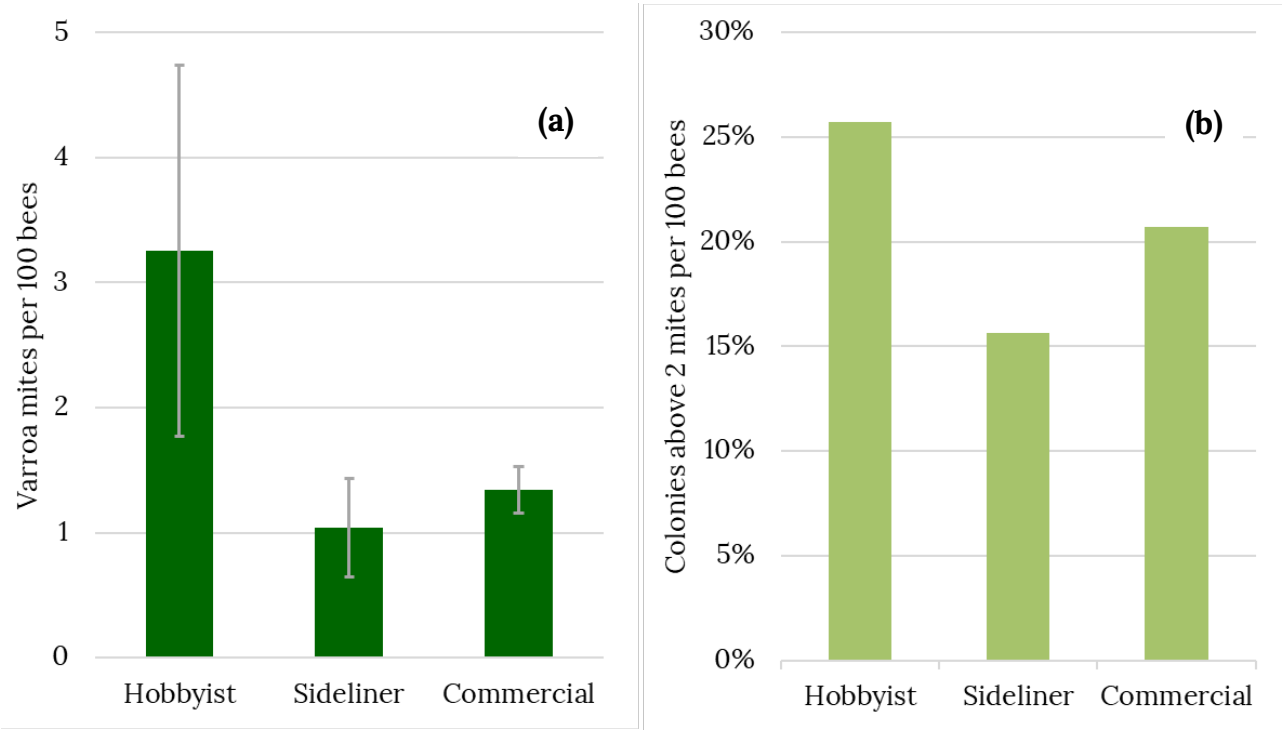

Figure 1. *Average Varroa levels (±SE) in different operation scales in June 2020 (a) and the percentage of colonies above the recommended treatment threshold (b).*

Figure 2 reports average June *Varroa* levels as a function of the duration of time beekeepers have participated in the Tech Team program. With each consecutive year they participate and receive education, beekeepers are better able to manage their spring *Varroa* levels. This graph includes data from 2016-2020.

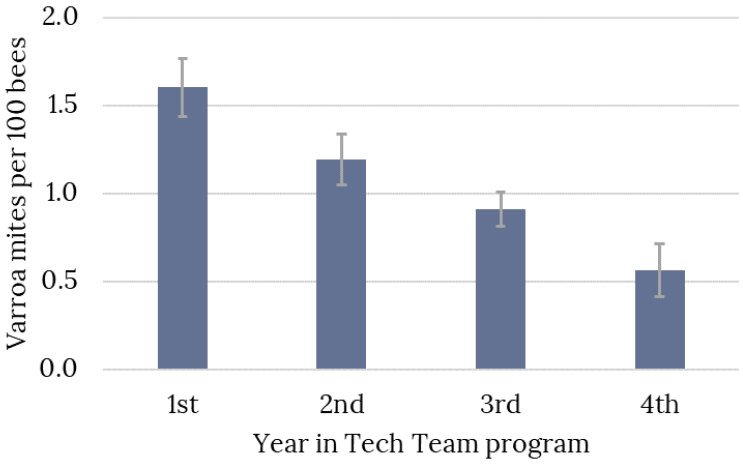

Figure 2. *Average June Varroa levels (±SE) by time beekeepers have participated in the NYS Beekeeper Tech Team program.*

Nosema

The Tech Team found *Nosema* spores in 82% of sampled colonies, with 20% of colonies exceeding 1 million spores per bee. Symptoms of this disease may be observed at and above this infection level. This *Nosema* prevalence is similar to previous years' and is not reason for concern. The Tech Team has found through past research that nearly all colonies infected with *Nosema* in June are able to improve or completely resolve those infections by September. See the 2018 and 2019 NYS Beekeeper Tech Team reports for more information.

Other Pests & Diseases

So far, 2020 has been a great year for bees in NYS. Brood diseases were generally uncommon, with 69% of colonies exhibiting no symptoms of disease whatsoever (Figure 3). Zero colonies inspected by the Tech Team in June 2020 had American Foulbrood (AFB). European Foulbrood (EFB) was only found in 4.4% of colonies, which is a marked improvement from June 2019 when 10.4% of colonies were infected and is more typically with what we observe in other years. Small hive beetles were observed in 3.5% of colonies, deformed wings in 2.6% of colonies, and chalkbrood in 2.2% of colonies.

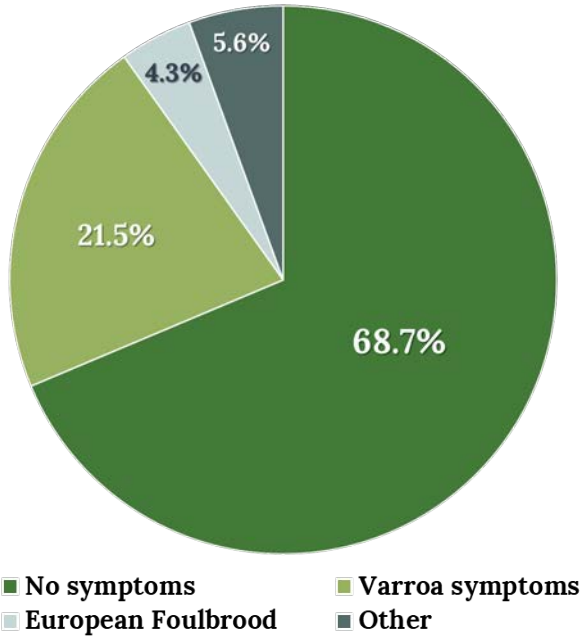

Figure 3. Proportional breakdown of health issues in colonies. "*Varroa* symptoms" include any of the following: observations of mites, deformed wings, chewed down brood, bald brood, or dead white larvae. "Other" health issues include small hive beetles, wax moths, or chalkbrood.

For more information

For more information about the NYS Beekeeper Tech Team and to access past reports, please visit our website *pollinator.cals.cornell.edu/nys-beekeeper-tech-team.*