In June 2021, the NYS Beekeeper Tech Team inspected and sampled 246 colonies from 25 operations across New York State. The colonies are managed by seven hobby beekeepers (that own 0–49 colonies), nine sideliners (50–299 colonies), and nine 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 the lowest winter losses since the program started in 2016, with estimated losses totaling 28%. New York’s winter was consistently cold, offering few opportunities for cleansing flights. But spring arrived early and colonies built up quickly. Many colonies entered spring with a lot of left-over honey stores in the brood nest and this, combined with the early arrival of the nectar flow, led to the swarm season starting about two weeks earlier than previous years. During the Tech Team’s spring inspections, 27% of colonies were either preparing to swarm or had recently swarmed. We encourage beekeepers to verify the colonies that swarmed successfully requeened. The consistent hot temperatures and abundant rainfall New York received in late spring and early summer are setting the stage for a good honey production year.

**Varroa**

Like previous years, colonies generally appeared strong and healthy this spring. Mite populations were low in June, averaging 0.94 mites per 100 bees (Figure 1a). Just 15% of colonies exceeded the recommended treatment threshold of 2 mites per 100 bees (Figure 1b). Hobbyist beekeepers had the lowest average Varroa populations at 0.40 mites per 100 bees, while sideliners had the highest average Varroa populations at 1.38 mites per 100 bees. For
the first time since the start of the Tech Team program, no colonies had parasitic mite syndrome, an advanced stage of Varroa infestation and viral infection. We also saw a relationship between Varroa loads and beekeepers’ time in the Tech Team program (Figure 2). With each consecutive year they participate and receive education, beekeepers are better able to manage their spring Varroa levels.

Although spring Varroa levels are low, data from previous years tell us to anticipate mite populations to rise throughout the season. The fall is notoriously a difficult time to control Varroa, so beekeepers must stay on top of mite management. We strongly encourage beekeepers to monitor colonies monthly and to apply a registered treatment every time their mites reach or exceed 2% in March – June and 3% in July - November.

Figure 1. Average Varroa levels (± SE) in different operation scales in June 2021 (a) and the percentage of colonies above the recommended treatment threshold (b).

Figure 2. Average June Varroa levels (± SE) by time beekeepers have participated in the NYS Beekeeper Tech Team program. This graph includes data from 2016-2021.
**Nosema**

In June 2021, the Tech Team found Nosema spores in 87% of sampled colonies, with only 18% of colonies exceeding 1 million spores per bee. Symptoms of this disease may be observed at and above this infection level. This Nosema prevalence follows trends from 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 without any treatments.

Most colonies had healthy brood...

**Other Pests & Diseases**

So far, 2021 has been a great year for bee health for the Tech Team’s participating beekeepers. Brood diseases were uncommon, with 63% of colonies exhibiting no signs of disease whatsoever (Figure 3). For the second consecutive year, zero colonies inspected by the Tech Team in June 2021 had American Foulbrood (AFB). European Foulbrood (EFB) was found in 6% of colonies, which is in line with what we observe most years. Chalkbrood was found in 2.4% of colonies, small hive beetles were found in 1.6% of colonies, and sacbrood virus and idiopathic brood disease syndrome (IBDS) each were found in a single colony.

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](pollinator.cals.cornell.edu/nys-beekeeper-tech-team)

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 larvae. “Other” health issues include small hive beetles, wax moths, chalkbrood, sacbrood, or IBDS.