

Orange County Beekeepers Association

Meeting Minutes

September 12, 2024

Janet Staats, OCBA President, welcomed everyone to the September meeting.

Hive Chat

Janet Staats opened the floor for Hive Chat discussion about topics relevant to fall management.

- Late season swarms
 - o Anya McGirk (tonight's guest speaker) noted she just had a swarm on September 4!
 - o Others reported still seeing drones and drone brood in their hives.
- Stressed bees this time of year
 - o Mark Powers had a really angry hive, and could not figure out why until he noticed a hornet nest nearby. Once he took care of the hornet nest, his bees calmed down quickly.
 - o Aside from predators like hornets, other reasons for hot hives this time of year could be due to robbing. Install robbing screens on your weak hives.

Presentation: "Hive Monitoring with Sensors and Data Analysis" by Anya McGirk

Anya was introduced by OCBA member Axel Ellings. Anya lives on a small farm in Holly Springs and has been keeping 2-25 colonies of bees for about 8 years. She first became interested in hive monitoring through her research at SAS. Now retired, she is a former distinguished research statistician in the Internet of Things R&D division and was previously a full professor in economics.

Sensors are becoming smaller, cheaper, and more prevalent. These days, sensors are not only used for collecting data, now you can actually do analytics on sensors. And because of all these reasons, using sensors to monitor hives is showing up more in beekeeping. But what can we learn from the data that's being collected? Are the learnings useful?

Anja talked about 2 types of sensors:

- o Temperature sensor
 - Small device placed in the middle of the brood box to measure temperature inside the hive
- o Hive scales
 - Modified scales to work with Brood Minder software (www.mybroodminder.com)

The Brood Minder system uses Bluetooth signals sent from the sensors, then collects the data and sends to the cloud. Anya has it set up to receive real-time data as well as daily email summaries. The real-time notifications give her information on potential issues such as temperature event warnings (e.g., swarms), and robbing (e.g. weight changes).

Using graphs, Anya demonstrated many scenarios of what the hive monitoring setup and data analysis could tell us about the health of our hives:

1. Brood presence and health
 - Temperature monitoring tells us if we have brood. The “brood zone” is 92-98 F. If temperatures drop out of this brood zone, it could be a sign of queen loss. Or, during the winter months, it would signal a good time to treat with oxalic acid, when the hive is broodless.
 - Temperature stability (ie, no dramatic spikes or valleys) can be indicative of colony strength.
2. Colony size and population growth/shrinkage
 - Anya showed daily graphs of weight over time: reveals foragers leaving in the morning ("breakfast trough")
 - Orientation flights: visible in the afternoon as weight drops (~1 lb of bees!)
3. Swarm events:
 - Swarms can be detected through sudden weight loss (as much as 6-8 lb!); there is usually a correlating temperature spike (4-5 F)
4. Robbing events:
 - Loss of weight due to stealing honey. If all the hives in an apiary have sensors, you will be able to tell who the robber was by the tell-tale weight gain.
5. Honey production
 - Graphs of weight gain over the course of days/weeks translates to amount of honey harvested during the nectar flow.
 - It is interesting to compare yields between hives in a single apiary in a given season, but also to compare yields from year to year.
 - Also offers insights to the timing of the nectar flow in different seasons.
6. Dead outs
 - Early detection of dead colonies is easily seen by drop in temperature. Anya noted she can tell almost immediately when she has a dead out and can deal with it before it becomes a target for wax moths.
7. Monitoring swarm traps
 - Placing a temperature sensor in swarm traps. She receives a text message notification when the temperature rises, indicating a swarm has moved in!

Anya concluded her presentation by answering the question “What management changes have you made based on the data collected from hive monitoring?”

- She now adds insulation under hive lids in summer for overheated hives
- Better swarm prediction and management
- Less frequent inspections of strong hives
- More efficient inspections based on data signals
- Improved timing for treatments and honey harvesting
- No wax moth issues due to early detection of dead colonies

Anya also stressed that while hive monitoring can be useful, it is never a complete replacement for regular hive inspections to visually correlate/confirm what the sensor data is suggesting.

Club Business

Volunteers needed:

Sign-up sheets were passed around for volunteer opportunities, including

- Holiday Party planning committee
- Standing Committees
 - o We need volunteers to help with education, extraction day event, AV assistance (during monthly meetings and during Bee School)
 - o Janet noted serving on one of our standing committees is a great way to learn the ropes, to meet other members, and potentially move up to positions with more responsibility (Directors) if that's something you're interested in eventually.

Nominating Committee update:

- Lisa Vogel (with assistance from Jeanne Arnts, Cindy Copolo, and Janet Staats) is heading up the Nominating Committee for 2025.
- Open Board positions we are recruiting for: President, Vice-president, and Outreach (co-) Director.
- Lisa noted that 2 people can be "co-directors". This has worked well in the past.
- Accepting nominations by email or in person:
 - o Celeste Mayer nominated Axel Elling for president.
 - o Susan Monpetit nominated Daniel Curry-Corcorran for VP.

Education update:

- Carrie Donley asked for volunteer(s) to assist during Bee School: setting up AV equipment, arranging the room, etc.

Master Beekeeper Program (MPB) Study Groups:

- Celeste Mayer introduced a "pizza box" study kit to help members who form their own small study groups (4-5 people) with the goal of taking the NCSBA MBP journeyman and master beekeeper exams.
 - o The kit includes a recommended reading list, curriculum, sample long answer questions, and sources for flashcards.

Membership update:

- Cindy Copolo noted 2 new members joined this month, for a total of 265 members (which includes 106 lifetime members).
- She also mentioned there are still about 7 members who said they would pay by check but have not sent it in.

Outreach update:

- Jeanne Arnts provided a summary of the recent outreach events and requests.
 - o Carol Woods (senior living community) has requested a high-level presentation to their beekeeping club. Randall Austin has volunteered to do this presentation.

- Shoutout to the many OCBA members who volunteered at the booth during the Sonark Music Festival (including Lisa Vogel, Cynthia Woodsong, Jeanne Arnts, Cindy Copolo, Brad Kosiba, Dorothy Hammett, and Jim Rodgers)
- An October presentation request for ~40 homeschoolers will be handled by Celeste Mayer, Lisa Vogel, with help from other members if needed.

Treasurer update:

- Janet Staats shared some summary slides (monthly report, budget) from Jim Greco, who was unable to attend the meeting.

Announcements:

- Blackwood Farm Park
 - Honey from the park apiary is available for purchase. Proceeds will go back to support the Blackwood Farm Park apiary.
 - There will be an in-hive demo at the apiary this Saturday, September 14 at 10AM. We will inspect the hives and do a mite count.
- State Fair
 - The NCSBA is looking for volunteers to work at the State Fair Honey Booth. As an incentive they are offering all volunteers a \$30 rebate to go towards attending an upcoming state meeting.
- Extractor Raffle
 - Raffle tickets are on sale now! All proceeds will be donated to the NCSU Endowed Professorship in Apiculture.
 - The drawing will take place at the Holiday Party this December.

Next Month's Speaker

At the October 10th meeting, Erica Calderon with the NC Department of Agriculture and Consumer Services, will share a presentation on *Agritourism and Beekeeping*.

Erika Wittchen
OCBA Secretary