NASS Survey Training

Quarterly Colony Loss - October 2023
(BEE COLONY LOSS QUARTERLY)

United States Department of Agriculture
National Agricultural Statistics Service

Workforce Performance and Staff Development Section
August 2023
Survey Overview

- Bee diseases and death loss have become a significant issue over the last few years
  - Some of the loss is due to unknown causes
- NASS doesn’t measure losses and diseases on our annual Bee and Honey survey
- You’ll be collecting important information on the extent and causes of loss and disease
Survey Information

• Project Code: 115 – Bee Colony Loss Quarterly

• Questionnaires:
  – Mailed out around September 21st

• Release:
  – Honey Bee Colonies
  – August 2024
Importance of Honey Bees

• Bee pollination is responsible for more than $15 billion in increased crop value
• One in three mouthfuls of food in our diet is directly/indirectly benefited from bee pollination
• CA almond production depends completely on honey bee pollination
  – Uses 1.4 million colonies = 60% of all managed colonies in the US
Hives/colonies in an apiary/bee yard

Removable Frames

Beekeeper holding frame
Screening/Intro Questions

• Own or control any apiaries between July 1, 2023 and September 30, 2023?
  – If YES, how many colonies owned on:
    • July 1, 2023?
    • September 30, 2023?
  – If NO: Has operation been sold, rented, or turned over?
Colonies and Losses/Addition by State

*Between July 1 and September 30:*

- Report colonies by state
- Were colonies in that state July 1?
  - If yes: How many in that state on July 1\(^{st}\)?
  - If no: How many when they first moved into the state?
- How many of those colonies were completely lost/died out between July 1 – September 30.
The Bee “Route”
Colonies and Losses/Additions by State

*Between July 1 and September 30*

• Of the colonies in that state, how many:
  – Were requueened?
    • *Excluding* any completely lost/died out colonies
  – Received nucs or packages?
    • *Excluding* any completely lost/died out colonies

• How many NEW colonies added in that state?
  – Include splits, newly created, and replacement of lost colonies
  – Exclude any colonies that received a new queen and/or additional bees (already reported)
Adding a queen
Colonies Sold

• Between July 1 and September 30, did the operation sell any colonies?
  – Exclude packages and nucs created specifically for sale
• How many colonies were sold?
Nuc ("nucleus" colony): Essentially a standalone colony. Comes with laying queen, worker bees, and brood. More expensive but will produce honey much faster.

Package (being added to hive): has workers bees and queen, but no comb. Cheaper, but takes longer to start producing honey.
Lost Colony Symptoms

*Between July 1 and September 30*

- Did any of the *lost* colonies exhibit **ALL** four of these symptom:
  - Little to no build-up of dead bees
    - In the hive or at hive entrance
  - Rapid loss of adult bees
    - Despite presence of queen, capped brood, food reserves
  - Food stores not immediately robbed by other bees
  - Loss not attributable to Varroa or Nosema
- If YES, how many colonies lost due to **ALL four** symptoms?
Colony Health Issues

*Between July 1 and September 30*

- Of the total colonies owned, the number of colonies in each state affected by:
  - Varroa mites; Other pests and parasites; Diseases; Pesticides; Other; Unknown

- Note that:
  - Affected, but not *necessarily* lost to
    - BUT also include colonies that were lost/died out
  - Can also have more than one affecting a colony
Things to Remember:

• There are many potential “relationships” between different answers throughout the survey
  – Be mindful of the data reported across the different sections
  – We don’t want to miss OR double count anything

• If it seems odd, probe. Leave good notes.

• Watch out for any differences across states
Watch out for:

• Large change in July 1 to September 30 number of colonies
• Large number of lost colonies
• Large portion of colonies receiving new queens and/or additional bees
• “Double reporting” of colonies lost, colonies receiving bees, new colonies added
  – Watch the specific includes/excludes for the items
• Inconsistent total number of colonies and sum of colonies for all states
Watch out for:

• Sum of new colonies/new bees added not consistent with sums reported for all states
• Colonies lost exhibiting ALL four symptoms exceeds total losses reported
• Losses/hives renovated but no problems reported
• NOTE: Across each section, these numbers may not all exactly match up...BUT they should be in the ballpark
  – If I initially report 100 colonies BUT then the sum across all states is 500 colonies—that’s probably a problem!
  – If I report losses or that I had to replace bees, but then report 0 hives with problems—that’s probably a problem!
Reluctant Response

• Why should I report?
  – The survey results provide a statistical benchmark on honey bee colony numbers and death loss for comparison each year. The information will allow the USDA, beekeepers, and any other interested parties to analyze data on a state-by-state basis, and compare specific quarterly losses, additions and movements.
Conclusion

• Very important survey, in service to the bee and honey industry and agriculture as a whole
  – NASS will be a primary source of nationally representative data on losses and disease prevalence

• Be sympathetic towards struggles beekeeper may be facing

• Comments are your friend
  – When in doubt, comment it out!

• Concerns, Comments, Questions?
  – Practice Exercises