

NASS Survey Training

Quarterly Colony Loss – 2024 Surveys

(BEE COLONY LOSS Quarterly)



United States Department of Agriculture
National Agricultural Statistics Service



WPSD
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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 & Honey survey
- You will be collecting important information on the extent and causes of loss and disease

Survey Information

- Project Code: **115** - Quarterly Colony Loss Survey
 - Jan. 1, Apr. 1, Jul. 1, and Oct. 1 Reference Dates
- Questionnaires:
 - Mailed out about a week before reference date
- Release:
 - *Honey Bee Colonies*, August, 2024

Did You Know?

- Bee pollination is responsible for more than \$15 billion in increased crop value yearly
- Honey bees pollinate crops that make up about one-third of our entire diet
- Two million flowers are visited to produce one pound of honey
- A hive of bees must fly 55,000 miles to produce one pound of honey
- An average worker bee makes only about 1/12 of a teaspoon of honey in its lifetime

Section 1 – Apiaries

- Own or control any apiaries?
 - If YES, how many colonies owned:
 - During the past 3 months
 - If NO, was there any change in operation

Section 2 – Colonies Owned

- On [first day of quarter/reference period], how many total colonies did this operation own, regardless of location?
- On [Last day of quarter/reference period], how many total colonies did this operation own, regardless of location?

Section 3 – Colonies by State: [During Previous Quarter]

2) Were these colonies located in the state on the first day of the quarter?

- Yes/No. (Check 'no' if colonies were moved in anytime after the 1st day of the quarter)

3) How many colonies in each state on Day 1, or when they were first moved into the state?

4) Of the colonies in Item 3, how many were completely lost/dead out during the quarter?

Section 3 – Colonies by State: [During Previous Quarter]

Report for all colonies owned by this operation during the reference period/quarter.

– (Day 1 will refer to the first day of the quarter.)

1) Report, separately, each state where colonies were located.

– (Exclude states that were passed through to reach destination)

Section 3 – Colonies by State: [During Previous Quarter]

5) Of the colonies in Item 3, how many were requeened?

- Exclude completely lost/dead out colonies from Item 4

6) Of the colonies in Item 3, how many received nucs or packages?

- Exclude completely lost/dead out colonies from Item 4

7) How many new colonies were added?

- Include: splits, newly created, and replacement colonies.
- Exclude: Colonies reported in Item 5 and Item 6

Section 3 – Colonies by State: [During Previous Quarter]

- During the quarter, did this operation sell or give away any of the colonies in column 3?
 - Exclude packages and nucs created specifically for sale
- If YES:
 - How many colonies from those reported in Item 3 were sold or given away

Section 4 – Loss

- Did any of the lost/dead out colonies experience ALL four of these symptoms:
 - 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
 - Absence or delayed robbing of the food reserves
 - Loss not attributable to Varroa or Nosema
- How many lost colonies experienced all of these symptoms?

Section 6 – Colony Health

- Report, by state, the colonies affected.
- Of the total colonies owned (during the quarter) how many were affected by, but not necessarily *lost* to:
 - Varroa Mites
 - Other Pests and Parasites¹
 - Diseases²
 - Pesticides
 - Other³
 - Unknown
- Comments?

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 omit **OR** double count anything
- If it seems odd, probe. Leave good notes.

Things to Watch Out For:

- Large change in quarterly 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 include/excludes for the items
- Inconsistent total number of colonies and sum of colonies for all states

Things to 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 likely to be a problem!
 - If I report losses or that I had to replace bees, but then report 0 hives with problems – how?

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 empathetic towards struggles beekeepers may be facing
- Practice some examples on your iPad
- Questions? Contact your supervisor or Regional Field Office.

Extra Info

Terms & Definitions:

Apiary: A place where bees are kept; a collection of hives or colonies kept for their honey. May also be referred to as a “bee yard”.

Colony: A group of worker bees, drones, queen, and developing brood living together in a hive.

Queen: A female bee with a fully developed reproductive system that is responsible for all the egg laying of a colony. Only one per colony, and must be present in the colony for it to be considered healthy.

Queen Cell: A large, peanut shaped cell that contains an immature queen. Often sold, then placed within a queenless colony.

Drone: Male bees which are the product of an unfertilized egg, primary role is to mate with a queen. Drones do not have stingers or participate in nectar and pollen gathering

Worker Bee: is any female that lacks the full reproductive capacity of the queen bee. A typical colony will contain 30-50 thousand workers. Collect nectar and pollen for hive honey and food source.



Renovate/Renovated Colony: This is not an industry term, but is used by NASS to describe a colony that has not failed, but had a new queen, or more bees, or both, added. Does not necessarily mean colony health was perilous. Renovates refers only to existing colonies receiving honey bees, not to be confused with new adds or replacements.

Requeen: The act of adding a new queen to a colony. Commonly done to replace a failing queen. Large commercial operations will requeen preventively every few months.

Split: Artificially creating a new colony by removing workers and brood from an existing colony and adding a queen.

Nuc (short for nucleus): A small colony of bees that consists of a queen, workers, and a few frames. They are used primarily for starting new colonies or rearing or storing queens. Sometimes added to existing colonies to improve colony health.

Package: A quantity of adult bees (2 to 5 pounds), with or without a queen, contained in a screened shipping cage with a food source. Sold to either start a new colony or bolster a failing one.

Varroa Mites: An invasive species of mite that originally parasitized the Asian Honey Bee. First discovered in the late '80s, the pest has become widespread among North American honey bee colonies. Without treatment, varroa will destroy a colony. Main carrier for the virus that causes deformed wings.

Deadout: A completely failed colony, loss of most workers and possibly the queen. Colony is no longer viable.

