MB-KRTP

Sustainable Canadian Agricultural Partnership
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Potential Reasons for Colony Loss: Spring CHECKLIST

Adapted from OBA Tech Program

Colonies (Previous Fall): #_____ Winter Loss:_____%

Impacts and clues to consider:

1. Timing of colony mortality
2. Queen issues
3. Varroa status, monitoring, & treatment history
4. Dysentery
5. Moisture
6. Starvation
7. Stress from pests, disturbances, environment

- The following checklist will assist in determining why you have dead or dying hives and how to proceed
- Checking this list throughout the season may help to prevent some issues leading into winter.
- Did colony loss occur consistently across the operation or in pockets? Describe: _____

_____

_____

1. Timing of colony mortality

(depending on how soon you check the colonies)

→ *Recent death:*

☐ Intact, fresh-looking bees, clustered on frame(s)

→ *Died earlier/Slow depopulation:*

☐ Bees lying on bottom board

→ *Died much earlier:*

☐ Very dry bees, mold on frames

☐ Smelly decomposed bees, mouldy

☐ Dead brood (check for disease)

☐ Wax moth is present (cocoons and tunnels)

✳ *Note: wax moth does NOT cause colony death but rather takes advantage of unprotected equipment*

2. Queen Issues

☐ Small cluster

☐ Remnants of queen cells on brood frames

☐ History of queen issues (swarming supersedure, etc.)

3. Varroa: status, monitoring, treatment history

☐ It was one of your strongest colonies/yards in the summer (strong colonies have higher mite levels)

☐ Died late fall or early winter

☐ Bees disappeared in late fall - few dead bees on bottom board

☐ Bees abandoned brood when they disappeared

☐ Small, dwindling cluster

☐ Presence of high amount of mite feces (white, dry, crystalline, attached to brood cell walls)

<u>Treatments Applied Last Fall</u>

→ Did you treat for:

☐ Varroa mites

☐ Tracheal mites

☐ Nosema

☐ AFB

☐ EFB

Treatment considerations:

☐ Y ☐ N Did dose, timing, etc. match label recommendation?

☐ Y ☐ N Aware of approx. resistance levels for amitraz in apiary?

☐ Y ☐ N Treat with optimal environmental conditions?

→ Monitoring

☐ Colony/yard notes from last fall indicate concerns. eg. strength, population, feed levels, queen status

☐ Monitored mite and/or disease levels **before and after** treatments were applied

→ Fall mite levels: % Date:

☐ Don't know

Notes on treatments applied or apiary health statuses:

(Eg. • *Oxalic dosage and timing, strip placement timing, formic formulations – equipment and weather conditions.*

• *Past outbreaks of chalkbrood, nosema, EFB, etc.)*

4. Dysentery

☐ There are fecal stains on the top bars/top of frames

☐ There are fecal stains on the front of the colony, near upper entrance

- ☐ Extended periods of extreme cold (no cleansing flights)
- ☐ Bees were fed with a high moisture content syrup (50% sugar syrups are higher in moisture than 70% which can cause dysentery over the winter)
- ☐ Bees had Nosema disease (*N. apis or N ceranae*)
  Did you get samples analyzed by the lab?_____
- ✳ *Note: In Manitoba, dysentery is more likely to be caused by poor feed, typically canola stores, than nosema*

5. Moisture

- ☐ Dead bees and debris are blocking the lower entrance, reducing ventilation
- ☐ Excessive moisture on inner cover, inner walls, frames
- ☐ Puddles of water on the bottom boards, mold
- ☐ No upper entrance (upper entrance provides good airflow to reduce moisture)
- ☐ Bottom board not tilted to allow for water drainage
- ☐ Excessive water in yard surrounding the colonies

6. Starvation

- ☐ The brood chamber is light in weight. eg. easy to lift/tip up from back
- ☐ The frames contain little honey, especially in the middle of the brood chamber many dead bees have their heads in the cells
- → Was the starvation due to extreme cold?
- ☐ The dead cluster is “stuck” in an area with very little or no honey

- ☐ Dead bees are tightly clustered, with several empty cells surrounding them, but honey is nearby
- ☐ Brood chamber still contains adequate feed/honey
- ☐ Hives were not wrapped, screened bottoms were left open, yard in a windswept location with no windbreak

→ It may not be starvation if:

- ☐ The bees died from another cause and the surrounding colonies robbed out the feed stores

✳ Checking the hives too late in the spring means there may have been a spring window for robbing that resulted in chewed wax cappings on the bottom board

7. Stress: pests/disturbances/environment

- ☐ Scratches or chew marks on the hive/wrap
- ☐ Many tracks in the snow (human, animal, machine)
- ☐ Mouse nests, chewed comb
- ☐ Recurring nearby activities that are loud, create vibrations
- ☐ Poor fall forage (nutritional stress) or summer drought?
- ☐ Fall patties were fed

Additional information/observations.