



Potential Reasons for Honey Bee Colony Loss - Spring Checklist

The following checklist will assist you in determining why you have DEAD or DYING hives in the spring. A colony with a tiny cluster of live bees should be considered dead. You can check this list in the fall and try to prevent the same problems for next winter. Print this checklist before going to the yards this spring. Check off all that apply in each category. Make notes, expand on what you see. Use pencil ☺

Yard:

Date:

Signs of starvation

- the brood chamber is light in weight. eg. easy to lift/tip up from the 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
- hives were not wrapped, screened bottoms left open, yard in windswept location with no windbreak
- brood chamber still contains adequate feed/honey
 - 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 provides the window for robbing
- there are chewed wax cappings on the bottom board

Moisture

- dead bees and debris are blocking the lower entrance, reducing ventilation
- excessive moisture on inner cover, inner walls, frames
- puddles of water on bottom board, mold
- no upper entrance (upper entrance provides good air flow to reduce moisture)
- bottom board not tilted to allow for water drainage
- puddles in yard surrounding the colonies



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- in DYING colonies, remaining live bees are dark, damp looking, missing hair

Timing of Bee Death (depending on how soon you check the colonies)

- Recent death:
 - intact, fresh looking bees, clustered on the frame(s)
- Died earlier/Slow depopulation:
 - bees laying on bottom board
- Died much earlier:
 - very dry bees, mold on frames
 - smelly decomposed bees, moldy
 - 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

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 have Nosema apis. Did you get samples analyzed by the lab?
- Note: in Ontario, dysentery is more likely to be caused by poor feed than Nosema

Varroa Mites

- it was one of your strongest colonies in the summer (strong colonies have higher mite levels)
- died late fall or early winter
- bees disappeared in late fall - no 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)
- If there is capped brood present, do the **bang test**:
 - i. uncapped the brood with your hive tool or fingernail



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- ii. lay a piece of white paper on a flat surface
- iii. bang the brood frame against the white paper
- iv. count the dead mites that fall onto the paper

Queen Issues

- small cluster
- remnants of queen cells on brood frames
- history of queen issues (swarming, supercedure, etc)

Treatments Applied Last Fall

- Did you treat for:

- varroa mites
- tracheal mites
- nosema
- AFB

- Treatment considerations:

- follow label directions?
- check for resistance?
- treat on time? eg. was the pest/disease damage irreversible?
- treat with optimal environmental conditions? eg. was it too cold?

Monitoring

- colony notes from last fall indicate concerns. eg. strength, population, feed levels, queen status
- monitor mite/disease levels **before and after** treatments were applied?
- treatment efficacy evaluated (using pre and post treatment mite/disease levels)

Stress Caused By Pests/Disturbances

- 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



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Notes!
