Early Spring Defecation Problems and Varroa Mite Distress in Bees
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The following notes are intended for beekeepers who may have hives that are weakened by varroa mite attack or hives that are clearly weakened or distressed in the spring.

1. Obviously the first problem with varroa mites is the immediate loss of population, but the second problem is the state of the bees that are left alive. Many of the survivors are weakened by the loss of blood, therefore, they are stressed.
2. The loss of blood means that their immune system will be compromised and they will be vulnerable to disease.
3. When these bees fly out (warm weather etc) they will be too weak to return.
4. Sadly, when you begin to feed these bees many will die and then the remaining population will grow very slowly. The bees will either die because of their weakened condition or the effects of ingesting fermented honey. The first feeding presents a real problem for the weakened hive, as the bees do not have the energy to devote to manipulating the honey and creating the necessary temperature and airflow for proper dewatering. Add to this the cooler temperatures of early spring and the perfect conditions for honey fermentation are created.
5. The only treatment for a hive attacked by varroa mites is to add population.

Now, in addition to this problem you may be seeing bees with defecation problems (either diarrhea or constipation). Primary evidence for these types of problems is many dead bees at the entrance of the hive.

To truly diagnose the problem you must take some unhealthy bees and pull them apart to look first at the contents of their digestive tract and then at the digestive system itself.

First, pull out the stinger and look at the digestive system contents.

1. If the contents are like dry pollen then the bees are constipated and the lemon juice solution (see below) can help. In general the lemon juice is of value because of the vitamin C content. Vitamin C will improve the bee's blood building processes and their immune system. The added acid is also of value to the digestive system.
2. If the contents are very watery with little evidence of other materials in the liquid, then the bees have diarrhea;
3. If the contents are watery, but there is clear evidence of pollen mixed in (put the contents on a tissue and as the watery solution wicks away from the dab point you will see specks of pollen or pollen-like materials left in a cluster at the dab point) then the bees may have Nosema disease or Amoeba (or Ameba for our American friends) disease.

4. If the contents are sticky or like syrup the bees have either just recently gorged themselves or there may be problems with fermented honey (cause explained above).

If you have examined the material and you are still unsure of the problem then take the next step and look at the digestive tract itself. Grab the digestive system between two fingers (or fingernails) and remove it.

1. If the digestive system is white and fat this indicates Nosema disease.
2. If the digestive system is red with liquid contents this indicates Amoeba disease.
3. If the digestive system is red with normal contents then the bee is healthy.

If the digestive system is white and tiny then there is a genetic issue that can be traced back to the queen.

Problem 1 (constipation) can be treated. Mix the following solution:

- One kilogram of honey,
- Five kilograms of sugar,
- Six liters of water and
- 50 grams of lemon juice.

If at all possible keep the solution warm and for a 3 to 5 frame colony spray 100 grams of the solution directly on to the population.

Problem 2 is treated in the same way.

Problem 3 (Nosema disease or Amoeba disease) requires the addition of fumagillin. I suggest three teaspoons in the recipe described above.

Problem 4 means that you must deal with the fermented honey.

This article gives some things to check and some actions to take for three types of situations. First, colonies that have been weakened by varroa mites; second, colonies that were weakened by varroa mites that have subsequently developed digestive distress; and third, colonies that were not attacked by varroa mites but do have digestive problems due to microbes or protozoa or fermented honey.

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