

Early Spring Digestive Problems

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Disease and the Cause

If there is a period of unseasonably mild winter weather, as has occurred this year, a queen will start to lay eggs despite the fact that there is no pollen available from outside of the hive. The bees must respond to the new brood by using the protein potential from their bodies and pollen stored in the comb to make jelly for the larvae. Inevitably cold temperatures return before the brood emerges and the bees will be unable to go out of the hive to get water for the new generation. The emerging bees will need pollen and water for the first three days. When the bees cannot fly out of the hive they will use water that has condensed in the corners. For larvae to grow the temperature in the hive must be maintained between 32 and 37 degrees Celsius, but in cold weather the corner temperature will be as low as 25 Celsius. Stagnant water held at 25 degrees Celsius is a perfect breeding ground for protozoa such as *Nosema Apis*, the cause of Nosema disease, and *Malpighamoeba mellificae*, the cause of Amoeba disease. Protozoa and other micro-organisms cause diarrhea and diarrhea amplifies the severity of the disease.

In some colonies that have experienced a mild spell that caused the queen to lay eggs if the temperature turns cold the bees cannot defecate and they will become constipated. These bees will have fat (bloated) abdomens. When the abdomens of these bees are squeezed dry pollen will come out. This problem can be fixed with a mixture of: 70% hot water, 25% honey and 5% lemon juice. Spray 100 grams of this solution for each single box of population on a sunny day at mid-day.

Signs of Disease

Dead bees will be found close to hive entrance. When the abdomen of one of the bees that has died with diarrhea problems is squeezed a watery yellow liquid will come out and when that liquid is placed on a white Kleenex or piece of white paper the liquid will absorb and leave behind a number tiny yellow specs. Bees that have Nosema disease will have digestive systems that are white and fat. A normal bee digestive system is red. The colonies that have the greatest problem with diarrhea and Nosema disease are the ones that had nutrition problems during the previous summer.

Another Cause of Bee Digestion Problems

Not all of the diarrhea or Nosema disease problems can be traced to a winter warm spell. In some colonies circumstances in the fall can cause defecation problems in the winter. When a colony has been fed sugar and cold weather or a weak population prevents the evaporation of water from the honey, the water / sugar mixture will ferment. This fermentation will cause diarrhea in the colony.

Prevention and Treatment

In all cases the best solution is prevention. Maintaining bee nutrition throughout the year is the answer to all of these problems. Well nourished bees can overcome microbial attacks and strong hives are able to properly dehydrate honey even in cool weather.

As was mentioned above, constipation can be treated with a mixture of: 70% hot water, 25% honey and 5% lemon juice. There are all natural, biological treatments for Nosema disease, Amoeba disease and other digestive disorders and these treatments can be discussed in a future article.