

What's happening to the honeybees?

Wild or feral honeybees have been disappearing since 1971. In addition, beekeepers have noticed a significant decline in the numbers of worker bees in the colonies that they maintain over the years. In October 2006, beekeepers started to report the losses, which were as high as 30 to 90 % of their hives.

The loss is mainly contributed to a phenomenon known as Colony Collapse Disorder (CCD). This mysterious syndrome is not well understood. Many theories exist as to what causes the disorder, however no substantial answers have been found.

According to the United States Department of Agriculture (USDA), the main symptom of CCD is no or a low number of adult honey bees present but with a live queen and no dead honey bees in the hive. Often there is still honey in the hive, and immature bees are present. Basically, the worker bees are not present and no one really knows what is happening to them. And since they do the "work," this is a serious problem for all of us.

But why on earth should we care about bees? We all need to pay attention to CCD because for every three mouthfuls of food we eat, one is a direct result of bee pollination. For example, nuts, berries, fruits and vegetables are mainly foods that have been pollinated by honey bees. "The world's food supply depends on pollination by bees. So anything that causes a significant loss of honey bees would severely limit the foods available to us. Overall, pollination is responsible for about \$15 billion in added crop value." *Agricultural Research, February 2008*

Many theories exist as to what causes CCD. Pesticides, parasites, pathogens, viruses, stress, poor nutrition, low nutrition, scarcity of nectar, exposure to contaminated water or limited water supply and even cell phones have all been pinpointed as possible causes. The short answer is that we simply don't know what causes it.

CCD has beekeepers worried. Some have lost over half of their colonies and if a solution is not found for this disorder, it could seriously threaten the pollination industry as it becomes more widespread. Therefore, scientists are aggressively researching this problem and teaming up with all concerned to find a solution. For example, The USDA's Agricultural Research Service held a CCD research workshop that brought together over 80 of the major bee scientists, industry representatives, extension agents and others to discuss a research agenda. The team has developed a research action plan to research what is causing the disorder and what actions to take.

According to the researchers "the search for factors that are involved in CCD is focusing on four areas: pathogens, parasites, environmental stresses, and bee management stresses such as poor nutrition. It is unlikely that a single factor is the cause of CCD; it is more likely that there is a complex of different components." (USDA)

What can be done while the researches are searching for a solution? According to the USDA, beekeepers can take steps to be pro-active:

- Do not combine collapsing colonies with strong colonies.
- When a collapsed colony is found, store the equipment where you can use preventive measures to ensure that bees will not have access to it.

- If you feed your bees sugar syrup, use Fumagillin.
- If you are experiencing colony collapse and see a secondary infection, such as European Foulbrood, treat the colonies with Terramycin, not Tylan.

As a homeowner, the best action you can take is not to use pesticides indiscriminately, especially not to use pesticides at mid-day when honey bees are most likely to be out foraging for nectar. You can also plant and encourage the planting of good nectar sources such as red clover, foxglove, bee balm, and joe-pye weed. (USDA, ARS)