What's happening to the honeybee?

The pollination impact of this insect's sudden disappearance

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Our honeybees are dying. Why should we care? Don't they sting people? All they're good for is making honey, right?

Nowadays people have a newfound appreciation for bees and what they do for us. Most crops with flowers and fruits require assistance to pollinate. These include cucumbers, blueberries, watermelons, apples, squash, strawberries, melons and peaches. Other crops that need pollination help from honeybees are alfalfa, cotton, peanuts and soybeans. All of these are extremely important to the Carolinas' economy.

Colonies in collapse

In nearly half of the United States, and elsewhere across the world, bees are leaving their hives and never coming back. Scientists call it "colony collapse disorder," but that's just a description, not a diagnosis. David Tarpy, a scientist at North Carolina State's bee research center who's working on the problem, said although parasitic mites attack colonies, they don't seem to be the cause of CCD.

"It's the manner in which (the hive's) dying that seems to be unusual. We can't pin it on the usual suspects," he said.

Once a hive is afflicted, nearly all of the worker bees fly off and die in the field. The queen and a handful of workers are left behind. Except for the lack of worker bees, the hive looks fine. There are no dead bees lying around, there's plenty of honey and pollen in the hive, and there are plenty of developing new bees. But without workers to maintain the hive and feed the babies, the colony cannot survive. It collapses.

IF CCD were to kill off all the bees, a number of fruits and vegetables would disappear completely from grocery store shelves. No honeybees means no almonds, which are a $2.5 billion industry in California alone. Wind, birds and other animals also help pollinate, but bees pollinate about a third of all the food eaten in this country.

Whodunit?

There are three lines of investigation into CCD: problems with colony nutrition and health, possible new diseases and environmental contaminants. It's like a murder mystery, but with millions of tiny victims. Environmental contaminants are something Tarpy has seen before with certain powdered pesticides such as Sevin dust. "(Honeybees) take it in and feed it to a brood; … overnight they've wiped out an entire hive."

Possible causes are new nicotine-based insecticides or genetically modified crops with natural insecticides built in throughout the plants. But these have been around for quite a while and CCD started abruptly in the fall of 2006. Cell phones and high wire towers also have been considered.

"These are not on the high priority list because beekeepers afflicted with the disorder have no pattern when it comes to those types of things," said Tarpy.

The other possibility is that some new kind of disease, mite or fungus is to blame. One of the oddest things about CCD is the condition of the bees left in the hive. They usually are infected with several different viruses and fungi, and it appears as though their immune systems are failing. If so, the cause may be something like AIDS in humans.

For commercial hives, overmedication and too much stress from transporting them across the country to pollinate crops has been suggested. But even non-stressed and organically managed hives are suffering. Richard Flanagan,

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Jimmy Odum (left) of the Mecklenburg Beekeepers Association. A typical commercial beehive is a 20-inch wooden cube encasing a single queen bee and approximately 50,000 worker bees. Blue orchard bees, or mason bees (below), may be able to help pollinate, especially during the spring.

Don Rosenberg/CW photos

Honey bees

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vice president of the Mecklenburg Beekeepers Association, reported that of his five hives, four of them collapsed over a three-day period.

So "why can't other insects do the pollination work?" It's true that many other bees (non-honeybees), flies and other insects also do some pollination when they visit flowers, but they can't take the place of easy-to-manage honeybees, which are extremely well-suited to crop pollination with their large colonies and willingness to pollinate year-round.

Honeybees also are important in the pollination of many fruits, vegetables and seeds in the home garden. If your vine crops – such as squash, peppers and tomatoes – have flowers but are not producing any fruit, then they're probably not being pollinated.

How to help the honeybee

So what can homeowners do to help? First, be careful when spraying around homes and gardens. The sprays used to control pests are often toxic to the honeybee. All-purpose insecticides kill the good bugs as well as the bad bugs. It's much better to use selective sprays for the garden's specific problems or to use only organic controls. If spraying is still necessary, do it early in the morning when the bees aren't out.

If there's a swarm of bees on your property in an area that is unsafe for your family, don't just buy an insecticide to kill them. Instead, contact your local beekeepers' association – members arrive quickly to remove the bees without harm and take them to a new home. To find the nearest association, visit www.NCBeekeepers.org for a statewide listing or www.MeckBees.org for a local listing. Most fire departments also have contact lists for local beekeepers who can help.

It's important to support local beekeepers by buying local honey. On a national level, write to local Congressional representatives and ask them to support research funds needed to help determine the cause of CCD and help reduce bee population losses.

One promising alternative to the honeybee is the blue orchard bee, or mason bee. They forage from February through May and are smaller and faster workers than honeybees. At only one pound, their hives weigh less than the honeybees' 50-pound hive, and good results are being obtained in Japan through refrigeration to extend the blue orchard bee's working season.

But it would be a lot better to solve this murder mystery and save the hard-working honeybee from disaster. ❑

A regular Charlotte Weekly columnist and creator of the Instant Organic Garden, Rosenberg is an exhibitor and featured speaker at the Southern Women's Show, at the Charlotte Merchandise Mart, Thursday-Sunday, Sept. 18-21. He'll speak about "Organic Vegetable Gardening Made Easy" on Friday, Sept. 19, at 4:30 p.m. and Sunday, Sept. 21, at 1:30 p.m. Rosenberg also will appear at the Charlotte Convention Center's "Saving Our Kids, Healing Our Planet" Sept. 26-28. He'll teach visitors how to "Build a Salad Garden to Go for your Kids" on Sunday, Sept. 28, from 1 to 1:45 p.m. For more information, visit www.instantorganicgarden.com.