Home & Garden

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Backyard Wildlife: What you can do to protect bees

Honey bees at work inside one of the hives at the Bayer North American Bee Care Center at Bayer CropScience facility in Research Triangle Park in 2014. Bayer scientists have been studying bee

health and husbandry practices since the early 1990s. **2014 News & Observer File Photo - Corey Lowenstein** clowenstein@newsobserver.com

BY RENEE ELDER

Correspondent

As an experienced wildlife gardener, I was skeptical when my eyes first landed on a Bayer CropScience media alert announcing the one-year anniversary of its North American Bee Care Center in Research Triangle Park.

What little I knew about Bayer – the company that I once associated with children's aspirin – included the fact that its CropScience division manufactures pesticides, some containing neonicotinoid, a substance that has been suspected of harming bees and recently was banned from Lowe's home improvement stores.

So I called Rebecca Langer, a microbiologist who serves as bee manager for the $12 million Bayer Bee Center that opened at RTP in spring 2014. Bayer scientists have been studying bee health and husbandry practices since the early 1990s. Its original bee research facility is in Monheim, Germany.

"Bayer has a longstanding interest in bees, because it's part of our business," said Langer, who cares for 13 hives containing approximately 60,000 bees each at the RTP site.

Although the company's Crop Protection/Seeds division manufactures pesticides, herbicides and other agricultural chemicals, it also develops seed strains aimed at improving yields of crops such as cotton, canola and wheat.

"We, as much as everyone else, have a need for bees," Langer explains. "We test all of our products for their effect on bees."

Bees provide a crucial link in the natural world. Bees pollinate 75 percent of our vegetables, fruits and nuts. Without pollination by bees, many crops could become extinct.

According to “Bee Basics,” a publication of the U.S. Department of Agriculture Forest Service and the Pollinator Partnership, about 4,000 species of bees live in the United States, but no honeybees existed here until European settlers brought them over in hives. Bees with names like the blueberry bee and squash bee pollinate native plants, with a single hardworking blueberry bee capable of visiting 50,000 blueberry flowers and generating 6,000 blueberries during its six weeks of life.

Both honey bees and native bee populations have been shrinking in recent years, and President Barack Obama is seeking $82 million in his 2016 budget to study the reasons for the losses, particularly the possibility that neonicotinoid or other pesticides are major culprits.

Langer said similar research has been conducted at Bayer’s Bee Centers for quite some time. She said bee scientists have not been able to link pesticide, when used exactly as intended, to major drops in bee populations.

One of the most serious threats identified so far is the varroa mite, which carries viruses and bacteria that are deadly to honeybees. Once the mite attaches to a bee like a tick and enters a hive, every bee in that community will likely become infected and die. Originating in Asia, where bees developed a natural resistance to the pathogens, varroa mites made their way to Europe in the 1970s and to North America in the 1980s. They wipe out millions of Western honeybees annually.

Another deadly phenomenon affecting honeybees is colony collapse disorder, in which entire colonies of worker bees disappear from the hive, leaving behind a queen and immature bees that cannot sustain themselves.

The cause of the collapse disorder is still unknown, although factors suspected include various viruses and fungi, genetic abnormalities, and loss of natural habitat that disrupts the bees’ life cycle. Water shortages, unusual weather patterns and chemical pest

control exposure are also of concern, according to the U.S. Environmental Agency's pollinator protection site (http://1.usa.gov/1ei7zxF).

Another possible factor is the stress that honeybees are under from being transported to multiple locations for pollination purposes, Langer said. Honeybees, she explained, are the most heavily traveled livestock in the United States. For example, California's almond crop requires 1.7 million colonies of bees during pollination season in mid-February – that's about half of all the bee colonies in the U.S.

Native bees are rarely affected by the verroa mite, but have suffered from a significant loss of local plant species. Pesticide misuse, climate change and proliferation of nonnative invasive species are also considered harmful to native bees.

Langer agrees that pesticides may harm bees and other insects if used incorrectly.

"It's critical to read the label – not only for the proper way to use pest control products but also how often to apply them," she said. "And it's important not to apply when bees are around or the flowers are in bloom that attract bees."

Although the jury may be out on whether safe application of pesticides damages bees and bee colonies, I avoid using chemicals on my plants and lawn whenever possible. I believe that a gardener who is trying to attract wildlife has an extra obligation to protect creatures coming to the yard.