



JUNE 2013

NEWSLETTER OF THE ALAMANCE COUNTY BEEKEEPERS

## Remember...

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Summer meeting for the State  
Beekeepers

What's Blooming?  
Sumac, Alsike clover, Ladino, (white  
clover), Sweet Clover, Sourwood

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*Alamance County Beekeepers*

**This month's meeting...** is at the Agriculture Building at 7:00 with Don Hopkins speaking on Honey Bee Pest Awareness. In case you don't know Don, he is the State Apiary Inspection Supervisor for the state of North Carolina.

## Minnesota Public Radio Tells a Planter Dust Story

By Dan Gunderson

ELBOW LAKE, Minn. — In a sprawling bee yard, beekeeper Steve Ellis wearily surveyed 1,300 hives destined for fields across the countryside.

Given that bees pollinate fruits, vegetables and nuts, and pollination is required for about one-third of all food production, he should be enthusiastic about their summer journey.

But as Ellis knelt in front of a hive to inspect it, he had cause for concern. Many of the bees were in no condition to pollinate plants and make honey. Indeed, drifts of decomposing bees covered the ground.

"From a beekeeper's standpoint it's a nightmare," Ellis said last week. "Dead bees everywhere."

The problem isn't an isolated one. Across the nation, large numbers of bees — about one-third of colonies each year — have been dying for the past six years. Scientists believe the cause is a combination of pesticides, disease and poor [nutrition](#), and some are concerned the annual bee losses are unsustainable. As soon as this year, some warn, there might not be enough bees to pollinate some crops.

As Ellis lamented the rotten odor of dead bees, which close to the hive he said "smells like death," a single bee struggled out of the hive dragging a dead bee.

"It's actually a good sign some of the bees have enough wherewithal to carry dead bees off now," he said. "For about a week they were so impaired they couldn't even carry the dead carcasses out, they just piled up."

So what killed millions of bees in this bee yard? The Minnesota Department of Agriculture, Bayer Crop Science, the University of Minnesota and Purdue University are all testing the dead bees, said Ellis, who thinks they were killed by a Bayer Crop Science [insecticide](#) from a nearby farm field.

In the winter, Ellis takes his bees to California to pollinate almond trees. He recently trucked the hives back to Minnesota and was at his bee yard preparing the hive to be placed around the

region when bees started dying. He took this video on May 7:

A farmer was planting corn on a nearby field that day, and the wind blew clouds of dust over the bee yard. Ellis thinks that dust carried a toxic mix, as the seeds were treated with neonicotinoid insecticide.

According to pesticide industry reports, more than 90 percent of corn seeds planted in the United States are coated with neonicotinoid insecticides.

Systemic insecticides are taken up by the growing plant, so the chemical is inside the corn plant, ready to kill any pest that munches on the leaves, stalk or roots.

Bayer Crop Science sent a team to collect samples of dead bees, Ellis said. The company did not respond to an interview request.

Neonicotinoid insecticides are used on more than 150 million acres of crops. As the seeds are being planted, the insecticide attaches to dust and drifts on the wind.

"Beekeepers in Ontario and Minnesota and Iowa and New York and all over the Corn Belt are reporting these kinds of problems," said Ellis, a member of the National Honey Bee Advisory Board, an organization formed by beekeepers to address bee losses. "We think it represents an unreasonable risk that the EPA should be able to recognize."

Beekeepers have asked the U.S. Environmental Protection Agency to restrict the use of neonicotinoid insecticides. Earlier this year, the European Union imposed a two-year ban on three neonicotinoid insecticides after the European Food Safety Authority identified "high acute risk" to bees.

One area of concern identified by European regulators is exposure to bees during spring planting.

In response to that ban, the EPA said there is not enough scientific evidence to impose similar restrictions in the United States. The agency is reviewing the registration of neonicotinoid insecticides, but that review is expected to take several years.

Ellis has been fighting government agencies and agri-chemical companies since his bees started dying about 2006. He is one of several beekeepers who sued the EPA this year seeking a moratorium on the use of neonicotinoid insecticides while the agency conducts an environmental study of the insecticides. The EPA does not comment on pending litigation.

According to Ellis, about 60 percent of his bees died over the past winter. After losing so many earlier this month, he will not have enough bees to put out all of his hives this summer, and the hives he does set out will have only about half the normal number of bees.

He is not the only beekeeper facing that problem. "Beekeepers have

Beekeepers have always been able to scrape up enough bees to build their operations back up to what they were, from a neighbor or from buying a few bees," Ellis said. "But this year, many major beekeepers are not building back up to their normal numbers."

It's unclear what a shortage of bees will mean for crops that depend on insect pollination. A severe bee shortage has never occurred before, Ellis said.

But bees are dying in large numbers around the world.

Many beekeepers and some scientists believe pesticides are the primary cause.

But the U.S. Department of Agriculture and the EPA contend the neonicotinoid insecticide isn't the only problem. A report earlier this year identified a combination of challenges: a growing prevalence of disease in honeybee hives; declining bee nutrition that stems from a diminishing plant variety as agriculture focuses on fewer crops; and the growing use of neonicotinoid insecticide across the rural and urban landscape.

Scientists and apiarists disagree over exactly what's happening, but there is consensus that disease, nutrition and pesticides have created a worst-case scenario for bees.

One theory posed by beekeepers and some scientists contends that bees are exposed to low doses of insecticide and are becoming disoriented. As a result, they do not eat properly, opening the door for disease to kill already weakened bees.

A growing body of scientific research shows that even very low levels of neonicotinoid insecticide exposure can affect bee behavior.

Vera Krischik, an associate professor of entomology at the University of Minnesota, noted that bees are very social insects with a complex communication system. For insects, bees have a big, well-developed brain, and neonicotinoid insecticides work by blocking neurons in the brain, she said.

"Very low levels are affecting foraging. That, to me, is the huge issue," said Krischik, who is publishing three years of research on bumblebees and honeybees. "Bees can't find their way home. You know, if you can't go out and collect pollen and nectar and you can't bring it back, then a colonial insect is going to

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A corn plant in a farmer's field has relatively low levels of insecticide. But the neonicotinoid stays in the soil for several years and is taken up by any plant growing there. So bees may be getting a small dose of insecticide from the corn and from the weeds growing on the edge of the field.

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However, it's not just farm fields that are affecting bees.

Neonicotinoid insecticides are ubiquitous in urban backyards. They protect flowers, shrubs and trees from pests.

The insecticide dose on backyard plants is much higher than what is used on farm crops, said Krischik, who found the insecticide that protects a rose bush or an apple tree is also deadly to bees who come to drink nectar from the flowers.

"I start to see a significant number being killed at the regular landscape rate," Krischik explained. "And when I add twice the rate, because you can use this product more than one time a season, the bees die in the flower. Just one sip kills them on the spot."

The next question for researchers is to understand how much neonicotinoid insecticide bees are exposed to across the landscape, Krischik said. But she cannot answer that question because she has no money to continue her research.

A year ago, the Minnesota Legislature blocked a grant that Krischik received from the Minnesota Legislative Citizen Commission on Minnesota Resources to study how treating trees for emerald ash borer is affecting bees.

**"But right now honey bees ... really are at the tipping point."** Marla Spivak

This year the Legislature passed a pollinator habitat bill. It appropriates \$150,000 a year to improve bee habitat and increase public awareness of pollinators. The legislation also requires state agencies to create a report on pollinator habitat and to establish a process for reviewing the safety of neonicotinoid insecticides.

The legislation reflects a growing public concern about bees, said Marla Spivak, a Distinguished McKnight Professor in the University of Minnesota's entomology department.

"The progress is going quickly now," Spivak said. "Even this pollinator bill passed in our Legislature this session is just amazing. This would have never happened three years, five years ago. So now I think we'll see some positive change. But right now honeybees ... really are at the tipping point."

The best way to help bees is to add more flowering plants on the landscape to improve bee nutrition and reduce pesticide use in agricultural and urban settings, Spivak said.

Ellis, the beekeeper, tells the story of imperiled pollinators every chance he gets, and most people are quick to express concern.

"Then they say, 'Oh, you're up against the ag-chem industry and the government?'" And I go, 'Yeah.' And they go, 'Well, you're screwed,' " Ellis recounted recently.

"But the problem is we're all in this together," he said. "It's not just me that's screwed, it's everybody. We all need these pollinators."

Keeping bees is no longer only about making a living for Ellis. It has become a crusade to save the pollinators that make a third of all food production possible.

### **Summer Meeting:**

## **July 12-14, 2012 NCSBA Summer Meeting**

Hosted by  
**Robeson County Beekeepers**  
at  
**Robeson Community College**  
5160 Fayetteville Rd., Lumberton, NC 28360

Register online or by paper

