

## **A sticky situation: bee deaths continue in France and abroad**

By: Emily Dickinson

Suzanne Vermandere and her husband, Philip, have spent the last 33 years in a dying profession.

“We took risks to do something we thought would be nice to do,” she said.

The Vermanderes, originally from Belgium, moved to France in 1978. Since then, they have lived on a farm in Le Langon, making their living as apiculturists, otherwise known as beekeepers.

But it’s not their profession that’s dying; it’s the honeybees. Research shows different factors contribute to the downfall of the honey industry that has occurred in France since 1994. The most prominent factors are varroa mites, a honeybee parasite, and a class of pesticides called neonicotinoids, explained Dr. Jeff Dawson, a biologist at Carleton University.

If they don’t die, they become confused and experience what French beekeepers call “Mad Bee Disease.” But this issue is not specific to France—it’s happening all over Europe and in North America, too.

New research as of January 2012 from Purdue University shows a small-scale example of how this problem has made its way to North America.

Dr. Christian Krupke is a Canadian entomologist—a scientist who studies insects—who has been conducting research on honeybees in Indiana for the past two years.

“We found piles of dead bees near the hive entrance,” he said. The research showed high concentrations of neonicotinoids in waste that is exhausted from farm machinery during planting.

He compared the effect of neonicotinoids on a honeybee’s nervous system to how alcohol affects humans.

“Lots of things can go wrong when you give an animal that uses its nervous system a dose of a chemical that targets the nervous system,” he said.

Yet because neonicotinoids are generally safe for mammals, they are the most widely used pesticide in North America, Krupke explained.

If the dose isn’t lethal, it can result in honeybees that are too disoriented to produce honey.

And a honeybee that cannot produce honey is exactly what the Vermanderes are dealing with. She said it has been difficult making a living.

Before 1994, France was producing 40,000 kg of honey a year. Nearly 20 years later, the country produces between 9,000 and 11,000 kg annually, she said. The Vermanderes lose about 15 per cent of their 500 hives a year.

Vermandere isn't just worried about her own livelihood and other beekeepers in France. She is outraged that even as some evidence proves that neonicotinoids are incredibly dangerous for honeybees, they are still widely used.

Vermandere, whose former career was in science, recognizes that there are other factors that contribute to the Mad Bees, such as the varroa mite. However, she places a lot of the blame on a certain strain of the neonicotinoid pesticide—imidacloprid. In France, the seed-coating imidacloprid is sold under the brand name Gaucho.

Chemical company Bayer CropScience introduced Gaucho to French crops in 1994. Gaucho, along with other neonicotinoids, has faced a lot of scrutiny in Europe in the past decade.

Gaucho alone has caused riots in France, forcing the government to conduct research and regulate its use more closely. In 1999, the French Minister of Agriculture suspended the use of Gaucho on sunflower seeds, and in 2004 restricted it for use on corn crops. The product is still in used on other crops, such as wheat and sugar beet.

“Even though it's banned, it never goes away,” said Vermendere. “It's persistent, nature can't get rid of it.”

Rain washes the pesticide off the crops and into the soil, and when the soil dries out, the pesticide-ridden dust blows onto other crops, explained Dawson.

“Neonicotinoids are residual pesticides, which can linger for years without being re-applied to a crop,” he said.

Although the pesticide can linger in the soil, the dose is not high enough to affect honeybees, explained chief scientist of ecotoxicology of Bayer CropScience, Dr. David Fisher.

He said scientists at Bayer CropScience do not think the product should have been banned on sunflower and corn crops.

“If these products were responsible for the problems that French beekeepers were having—they had higher than normal losses of bee colonies—once those products came off the market you would expect that the problems the French beekeepers had would go away,” said Fisher. “And that did not happen. Those problems continue to today.”

Fisher says that the main problem that should be looked into is varroa mites.

Bayer CropScience also believes that since most of the research about neonicotinoids is done in a laboratory, it cannot be trusted.

“In the laboratory, you can see effects, but in the field as the product is being used, all of the studies show no effects,” said Fisher. “Our position has been that the field exposure is what’s relevant to deciding whether a product should be registered or not.”

At the European Parliament level, the Agriculture and Rural Development Committee agrees that the current data is not reliable.

According to a press release from October 25, 2011, the committee is calling on the Members of European Parliament to “see national surveillance systems put in place and harmonized standards developed at EU level for data collection.”

The detailed 56-point bee health report also called for bee-friendly plant-protection products. It was voted through at the November 2011 plenary session in Strasbourg, France, which happens monthly.

MEP for Luxembourg Astrid Lulling, European People’s Party, thinks the report by Hungarian MEP Csaba Sándor Tabajdi, Progressive Alliance of Socialists and Democrats, is too broad.

“Unfortunately the rapporteur had very large approach to the subject, in my opinion too large, so that a lot of the key messages have been diluted in the unreadable unstructured final text,” said Lulling, who is a member of the committee.

Lulling, who believes both neonicotinoids and the varroa mite play leading roles in problems in the beekeeping industry, has several suggestions for improvements in the future. She encourages support of the beekeeping sector so it can get recognized in the 2013 EU budget. She also calls for more research to be conducted for fighting the varroa mite.

She requests that the European Food Safety Agency, which has the power to create an EU-wide ban on a substance to be implemented by the member states, to have a closer look at how pesticides react together, as well as enhancing the bans on dangerous neonicotinoids.

Vermandere said she is wary of the decisions made at the European Union level, even scientific evidence.

“It’s ridiculous because in any case, the European Union and the agencies that evaluate the situation of course are under strict fire of lobby firms,” she said.

“Politically, a decision has to be taken, and the financial benefit of [Bayer] is more than the benefit of a bee.”

Like many apiculturists, what the Vermanderes are left with is a depleting collection of disoriented bees, and a decreasing yield of honey.