

# Pesticides linked to bee deaths must be banned, scientists say

## Neonicotinoids, fipronil linked to ecosystem damage in new report

By Aleksandra Sagan, [CBC News](#) Posted: Jun 24, 2014 12:27 PM ET Last Updated: Jun 24, 2014 10:44 PM ET

Scientists want two commonly used pesticides banned around the world for helping cause the mass deaths of bees and harming the planet's ecosystem.

A panel of independent scientists, operating as the Task Force on Systemic Pesticides, found the pesticides neonicotinoids and fipronil are harming the environment, posing a similar threat as DDT did in the 1960s.

- [Bee researchers raise more warning flags about neonicotinoid pesticides](#)
- [What's killing Canadian honeybees?](#)
- [Honey bee deaths start with pesticide, end with virus](#)

The scientists, who eventually want the use of these pesticides to be phased out globally, say regulatory bodies must at least mandate more precautionary measures and tighter regulations around their use.

Neonics are a popularly used preventative pesticide, being sprayed over crops or coated on plant seeds before there is a pest problem, according to the task force.

They represent 40 per cent of the insecticide market, and global sales tallied more than \$2.79 billion in 2011.

## 'Life would be awful' without bees

After being treated with systemic pesticides, plants absorb and transport them to all their parts: leaves, flowers, roots, stems, pollen and nectar.

The pesticides are then picked up by insects, like bees and butterflies.

'We'd be eating porridge, rice, bread — not much else. Life would be awful.'- *Dave Goulson, one of the report's authors*

"Seventy-five per cent of the crops that we eat are pollinated by insects of one type or another — mostly by bees," said professor Dave Goulson, one of the report's authors.

Pollinators, like bees and butterflies, are heavily affected by pesticides.

In bees, exposure can cause problems with navigation, learning, food collection, disease resistance and reproduction. Exposed bumblebee colonies have grown more slowly and produced fewer queens.

"So, if we didn't have those bees — if we don't look after them — then we won't have most of the fruits that we like to eat, most of the vegetables that we like to eat," said Goulson. "We'd be eating porridge, rice, bread — not much else. Life would be awful."

- [Blood-sucking mite turns benign bee virus into colony killer](#)

But not everyone supports the idea of a ban on neonicotinoids. CropLife Canada, a trade association that also represents developers and distributors of pest control products and plant biotechnology, opposes a ban saying [the varroa mite is the primary culprit behind declining bee health](#). It says there is no correlation between pesticide use and bee health.

## Beekeeper loses 65 million bees

David Schuit, a former bee hive inspector, lives in Hanover, Ont., and owns Saugeen Country Honey, a family beekeeping business that started in 2007.

Since 2012, the family has lost more than 65 million bees, said Schuit. He estimates he now owns about 2,000 and attributes the monumental decline to the liberal use of neonicotinoids on nearby farms.

Health Canada's Pest Management Regulatory Agency tested the soil on his property for traces of neonicotinoids, he said. In some soil outside the honey house, he said the agency found traces of the pesticide.

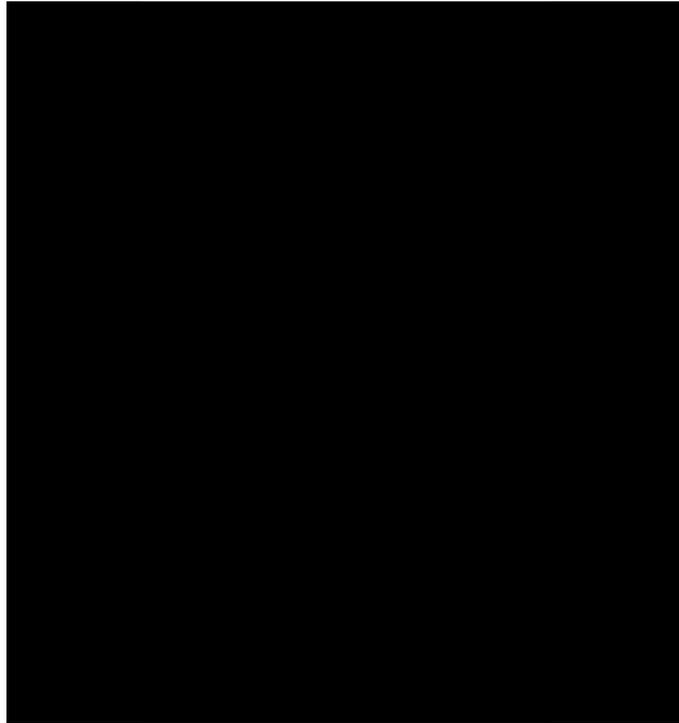
"This is no joke. This is reality," he told CBC News. "We need neonicotinoids banned now"

The pesticide exposure impacts a bee's memory, he said, and they struggle to do simple tasks, like find the hive entrance. Bees also have a harder time breeding, and Schuit can't manage to maintain enough queen bees for his business.

Frequently, he comes across Canada geese and other bird carcasses on the fields. He said the birds die after eating exposed seeds coated with the pesticide.

He posts photos and videos documenting the deaths of his bees and the frequency of exposed seeds on the company's Facebook page.

"It's an environmental disaster in the making," he said.



 **Saugeen Country Honey**  
Farming/Agriculture · 595 Likes · May 21 · 

Sorry for the fast moving video clip. Healthier bees are so good at taking their dead away that it is sometimes hard to keep up to them while shooting a video. May 21, 2014

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This year, he's moved most of his hives out of the immediate area and into what he calls bear country, "where you can't put a plow on the ground."

There, he said the bees look a lot healthier.

## 90% goes into environment, not crop

But not just pollinators are exposed. Any animal that munches on the plants or seeds is also at risk. There's also soil and water exposure to take into account.

More than 90 per cent of the pesticide goes into the environment rather than the crop, said Goulson.

*'Far from protecting food production, the use of neonics is threatening the very infrastructure which enables it.'* - *Dr. Jean-Marc Bonmatin, one of the report's lead authors*

In soil, what is known as the pesticide's half-life — or the amount of time it takes for half of the compound to disappear — can be years.

Farmers who use the product annually build up toxicity in the soil, so the pesticide gets into groundwater and then streams, he said.

Soil contamination also exposes terrestrial animals like earthworms. The study's authors claim pesticides have caused behaviour changes in exposed earthworms, like feeding inhibition, as well as death.

Freshwater snails and water fleas suffer the most from water contamination.

"Essentially, we're contaminating the global environment with highly toxic, highly persistent chemicals," said Goulson.

## DDT-like threat

While the affected animals may seem insignificant, Goulson warns that biodiversity is essential for humans.

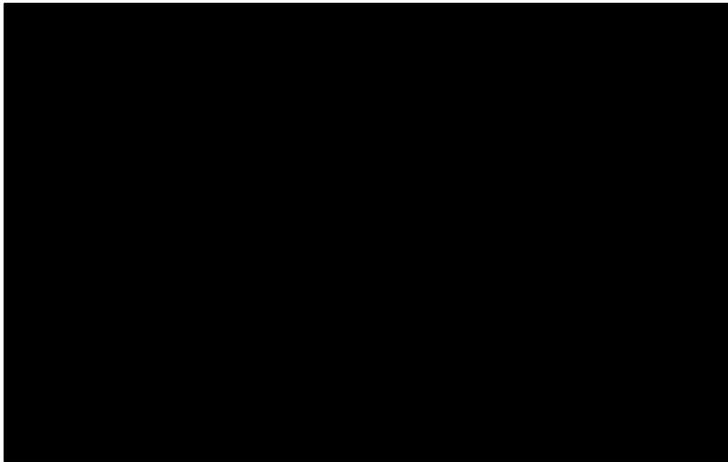
"We are witnessing a threat to the productivity of our natural and farmed environment equivalent to that posed by organophosphates or DDT," Dr. Jean-Marc Bonmatin, one of the lead authors of the report, said in a written statement.

"Far from protecting food production, the use of neonics is threatening the very infrastructure which enables it, imperilling the pollinators, habitat engineers and natural pest controllers at the heart of a functioning ecosystem."

DDT, which stands for dichlorodiphenyltrichloroethane, was a liberally used pesticide in the early 1960s. It was banned in 1972 to protect wildlife and people from its toxic effects.

The study points out that some neonics are 5,000 to 10,000 more toxic to bees than DDT.

- [On mobile? Watch the Task Force on Systemic Pesticides' video here.](#)



Health Canada has recommended steps to minimize bee exposure to neonicotinoid during the 2014 spring planting season. The measures for planting treated corn and soybean seeds include:

- Reducing dust from coated seeds.
- Safer seed planting practices.
- Labels with enhanced warnings.

Health Canada said it will closely monitor the 2014 growing season and may take further action after evaluating the outcomes of the new measures.

Health Minister Rona Ambrose called the research done by her department to date "inconclusive."

She also said that Canada is working with the U.S. government on the issue of neonicotinoids and their effects on bees and other pollinators.

"We are constantly absorbing new science and reassessing. If there is a danger to Canadians, then we will act further," she added on Tuesday at an event in Toronto.

The Worldwide Integrated Assessment of the Impact of Systemic Pesticides on Biodiversity and Ecosystems will be published in the peer reviewed *Environment Science and Pollution Research* journal in a few weeks. The date is still to be determined by the journal.

*With files from Max Paris and Colin Butler*