

Colombia's apiarists say avocado buzz is killing bees

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Gildardo Urrego's apiary in Colombia's Antioquia Department produces honey flavored with pollen from nearby passion fruit orchards

For the second time in two years, Gildardo Urrego is scooping up piles of dead bees after an invisible evil invaded his hives in northwest

Colombia, wreaking havoc among his swarms.

Urrego has no proof, but he suspects the culprit is pesticides which have been fuelling a commercial avocado and citrus boom in the country.

Hundreds of hives have been killed off in Colombia in recent years, and some investigations have pointed to fipronil, an insecticide banned for use on crops in Europe and restricted in the United States and China.

It is used to control all manner of insects, including ants and ticks, and has been blamed for several bee massacres around the world.

Urrego's apiary in Colombia's Antioquia Department produces honey flavored with pollen from nearby passion fruit orchards. In 2019, he lost 10 of his 19 hives.

This time, he said, a third of his 12 hives were wiped out—a loss of some 160,000 of the industrious little pollinators.

"There is a theory that, yes, this is due to poisoning, there are some crops around here that perhaps have not managed their agrochemicals well and so this area was affected," he told AFP.

In recent years, bees in North America, Europe, Russia, South America and elsewhere have started dying off from "[colony collapse disorder](#)," a mysterious scourge blamed partly on pesticides along with mites, viruses and fungi.

The UN warns that nearly half of insect pollinators, particularly bees and butterflies, risk global extinction.



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Free fertilization

About 1.4 billion jobs and three-quarters of all crops around the world, according to a 2016 study, depend on pollinators, mainly bees, which provide free fertilization services worth billions of dollars.

Some 300 kilometers (186 miles) south of Antioquia, in the Quindio Department, Abdon Salazar has no qualms pointing the finger at fipronil as he counts his losses.

"Over the last two years, we have calculated more than 80 million dead bees," he said as he walked among the 300 vibrating hives of his business Apicola Oro (Golden Beekeeping).

"We are talking some 800 hives, 100,000 bees per [hive](#), it is a very large quantity, an alarming quantity."

Salazar and other beekeepers in the region are increasingly having to clear out mounds of dead bees from their apiaries which are surrounded by avocado and citrus plantations in an exceptionally fertile and biodiverse part of the world.



The government's agriculture institute denies any link between the expansion of avocado crops and bee deaths

Toxic neighbors

In Quindio, hive collapse has coincided with the expansion of monoculture in recent decades, according to Faber Sabogal, president of the Asoproabejas beekeepers' organization.

According to the local government, five [multinational companies](#) bought large tracts of land in the region between 2016 and 2019 to profit from the growing global appetite for Hass avocados.

Exports skyrocketed from 1.7 tons in 2014 to 44.5 tons in 2019, and this year, Colombia became the largest supplier of the creamy, green delicacy to Europe.

But bees are the collateral damage, becoming contaminated as they buzz through pesticide-treated plantations looking for food, say beekeepers.

"They bring this poison to the hive and kill everyone else," said Salazar.

Economic impediments

Asoproabejas members have videotaped dozens of mass bee die-offs in several regions of Colombia, mainly in the west.



Avocado farmers say their crops require intensive spraying as they are highly vulnerable to pests

Last year, the state-owned Colombian Agricultural Institute (ICA) was notified by beekeepers of 256 suspected hive poisonings in Quindio alone.

Some 10 million insects were lost.

ICA regional manager Jorge Garcia said the body examined samples from six apiaries and found that "the fipronil molecule is one of the causes of mortality."

The alert was raised with ICA headquarters in Bogota, which is working

on a suspension order, he told AFP.

Withdrawing the poison altogether has been difficult "because the companies producing agrochemicals will be affected economically," said Salazar.

Competing interests

Maria Latorre, spokeswoman for Colombia's agrochemical union, said a fipronil ban would provoke "a very negative situation for the productive structure" of the 33 crops that rely on it.

The body denies that fipronil is harmful to bees, but said it would welcome a "review" of its use "on crops that have had incidents."



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Fipronil, threat to bees

Fipronil



Pesticide used to combat plagues of insects and parasites

Use of the insecticide is restricted in the EU, China and Uruguay

- Bees are contaminated as they fly among sprayed crops such as avocados, cotton, maize, sunflower and citrus fruits
- The bees then take poison to the hive

Effects on bees

Immediate
Lethal

Chronic
Immune response deficit
and reproductive cycle
Impact on survival of queen
bees and larvae



In the habitat
Reduction of
foraging space

Other effects
Navigation deficit
and various cellular functions
Damage within the hive

Sources: FAO; Martin-Culma, N. Y., & Arenas-Suarez, N. E. A.-S. E. (2018). Collateral damage in bees due to pesticide exposure of agricultural use. *Enramado science journal*, 14(1), 232–240.



Details on the threat to bee health posed by fipronil, a pesticide used to combat

plagues of insects

But Fernando Montoya of the Colombian Hortofruticola Association, which represents crop growers, said the chemical could be replaced by "mushroom-based bioproducts," insect traps and manual pest removal.

The ICA has denied any link between the expansion of avocado crops in Quindio and the recent decimation of bees.

But rather than risk losing it all, Apicola Oro, which produces some 36 tons of honey a year, decided to pack up and leave.

Salazar took most of his bees—some 1,200 hives—from Quindio to a remote place some 400 kilometers away.

He has managed to save his business for now, but worries about the future.

"The bee is a bioindicator. If bees are dying, what other insects beneficial to the environment... are dying?"

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