

Research Suggests Pesticide Is Alluring and Harmful to Bees

By [MICHAEL WINES](#) APRIL 22, 2015

Research by European scientists raised fresh questions on Wednesday about the impact on [bees](#) of neonicotinoids, a ubiquitous and controversial class of pesticides whose future use was restricted this month by the Environmental Protection Agency.

In a study [published in the journal Nature](#), Swedish researchers reported that wild [bees](#) and bumblebees foraging in crops treated with that type of pesticide were less likely to reproduce than bees in untreated fields, and that bumblebee colonies in treated fields gained less weight. In addition, fewer wild bees and bumblebees were found in treated fields than in untreated ones.

Ordinary honeybees appeared unaffected, perhaps, the researchers said, because they were better able to rid themselves of neonicotinoid contamination than were their wild cousins. Honeybees make up the bulk of bees used to pollinate commercial crops.

A [second study](#) by British and Irish researchers concluded that honeybees and bumblebees actually preferred to drink sugar solutions containing two kinds of neonicotinoid pesticides over plain sugar solutions, even though they ate less — and even when they were more likely to die.

That finding, which emerged from a broader test of bees' sensitivity to chemicals in their food, was a complete surprise, one author of the study, Geraldine Wright of the University of Oxford, said in a telephone conference call.

The researchers said the results cast doubt on theories that bees would avoid treated plants because neonicotinoids tasted bad. To the contrary, they stated, further study showed the bees were unable to taste the compound, but apparently preferred to consume it anyway because the nicotine-like substance affected their brains.

The two studies seem certain to fuel an already pitched debate over the safety of neonicotinoids, which have become one of the most widely used classes of pesticides. In the United States, most corn and many soybean crops are grown from seeds impregnated with neonicotinoids, so that the pesticide is contained within the plant instead of being sprayed on. Insects that suck or chew on the plant are poisoned when they feed; the compound typically breaks down before harvest.

Manufacturers insist that the pesticides are not merely safer for the environment than other pesticides, but safe for bees and other pollinators when used properly. Seeking to protect a huge market, they have moved aggressively to deal with documented risks, such as the spread of toxic dust into nearby fields when treated seeds are planted.

They have dismissed some laboratory studies that suggest the pesticides harm bees, arguing in part that poisoning risks in the real world are considerably smaller.

But other experts have long argued that the pesticide can dramatically affect bees and other pollinators in or near neonicotinoid-treated fields, crippling their memories and navigational skills

and crimping their growth and reproduction.

In 2013, the European Union voted to suspend the use of three common neonicotinoids on crops that attract bees until more studies could be completed.

The Environmental Protection Agency, which is amid a lengthy review of the pesticides' registrations, [said this month that it is unlikely to approve new uses](#) for neonicotinoids "until new bee data have been submitted and pollinator risk assessments are complete."

Should the studies released Wednesday withstand scrutiny, they would bolster some arguments of the pesticides' critics: that neonicotinoids are harmful to wild bees under real-world conditions, and that the insects have no natural aversion to the compounds. But they leave unanswered the question of the pesticides' impact on ordinary honeybees.