

# Researchers find neonicotinoids present a danger to pollinators

August 8 2019, by Bob Yirka

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A small team of environmentalists with Friends of the Earth, Toxicology

Research International and Pesticide Research Institute has carried out a study of insecticide toxicity loading of chemical pesticides that are used on agricultural lands in the U.S. They have concluded that neonicotinoids present a major danger to pollinating insects and have posted their results on the open-access site *PLOS ONE*.

In the study (funded by Friends of the Earth), the group looked at the impact of the increased use of neonicotinoids on farming products in the U.S. They note that use of such insecticides has increased dramatically in the past 20 years.

Neonicotinoids are a class of insecticides that target the nervous systems of insects—they are both less expensive to make and less toxic to humans than other products, making them an appealing option for agriculture applications. The researchers note that they are far more toxic to insects, including those not targeted by [agricultural practices](#) than prior industrial insecticides. They also last a lot longer in the soil and are water-soluble, which means they travel from the soil to the water table when it rains.

The researchers carried out an assessment of toxicity loading of [agricultural lands](#) by obtaining and analyzing data from a variety of sources, such as the National Agricultural Statistics Service. They report that they found that [insecticide use](#) over the past several decades has changed dramatically—where once, pyrethroids were the main products used to control crop eating insects, now neonicotinoids dominate. They note that there are three main neonicotinoids currently in use: imidacloprid, clothianidin and thiamethoxam.

Two are made by Bayer (which owns agriculture giant Monsanto) and the other by Syngenta. They also note that soybeans and corn are the main crops on which neonicotinoids are used. They also found that the insecticides are used in three ways—to coat seeds, as a spray on citrus

trees and as a soil drench of annuals. The researchers also found that multiple studies have been conducted surrounding the use of neonicotinoids, and many have found that the insecticides harm insects, particularly pollinators and the animals that eat them. They point out that the [insecticide](#) has been found in plant tissue, pollen and nectar—and even [honeydew](#).

In looking at the ways neonicotinoids are being used in the U.S. and how extensively, the researchers have concluded that they represent a major danger to pollinating insects, particularly bees.

**More information:** Michael DiBartolomeis et al. An assessment of acute insecticide toxicity loading (AITL) of chemical pesticides used on agricultural land in the United States, *PLOS ONE* (2019). [DOI: 10.1371/journal.pone.0220029](#)

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