

# So-called 'safe' pesticides have surprisingly ill effects

February 21 2023, by Erik Rolfsen

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Health Canada is currently reviewing regulations for pesticides in Canada, and three UBC researchers say regulators might want to consider what happened in Japan.

A [lake](#) in Shimane Prefecture has seen its commercial fishery collapse by more than 90 percent since 1993, when insecticides known as

neonicotinoids were first introduced to the area. It just so happens that zooplankton—the tiny creatures in the water that fish feed on—declined by 83 percent during the same period.

That's just one example of the unanticipated ripple effects of [pesticides](#) uncovered by UBC ecologists Dr. Risa Sargent, Dr. Juli Carrillo and Dr. Claire Kremen in their review of recent science.

They also found concerning research about glyphosates. Use of this weed-killer has increased 100-fold in recent decades. Because it targets an enzyme that exists only in plants, it was thought to be perfectly safe for animals. However, a study last year showed that it alters the mix of bacteria and microbes in bees' intestines, while also disrupting their ability to keep hives at the optimum temperature.

When the chemicals you use to protect crops harm their pollinators, are you really any further ahead?

It seems not. A third study showed that the use of neonicotinoid in a cornfield produced no increase in [corn yields](#) but did depress yields and profits in nearby watermelon fields by 21 percent.

Looking at these findings together, the researchers conclude that scientists have some catching up to do if we are to understand the full picture of the impacts of pesticide use. And regulations need to catch up to the science.

The paper is published in the journal *Trends in Ecology & Evolution*.

**More information:** Risa D. Sargent et al, Common pesticides disrupt critical ecological interactions, *Trends in Ecology & Evolution* (2022). [DOI: 10.1016/j.tree.2022.12.002](https://doi.org/10.1016/j.tree.2022.12.002)

Provided by University of British Columbia

Citation: So-called 'safe' pesticides have surprisingly ill effects (2023, February 21) retrieved 19 April 2024 from <https://phys.org/news/2023-02-so-called-safe-pesticides-ill-effects.html>

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