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Organic pesticides can be worse than synthetic: study

University of Guelph researchers say organic requires larger doses

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Organic doesn't always mean more environmentally sustainable, according to a University of Guelph study.

Researchers found the environmental impact of organic pesticides can be worse compared to synthetic pesticides, because organic pesticides often require larger doses.

The findings, which were published Tuesday in journal PloS One, are the result of a two-year long study that examined the performance of two natural pesticides against four synthetic pesticides on soybean aphids.

The organic pesticides in the study not only killed the aphids, but their natural predators too. Three of the four synthetic pesticides were more selective than the organic pesticides, so they caused less environmental impact, study researcher and University of Guelph professor Rebecca Hallett said.

"There is a general assumption among the public that if a compound is natural it's going to be safer than something that's synthetic," Prof. Hallett said. "This research shows that's not necessarily the case."

But the implications of the study are minimal because organic farming is not about replacing synthetic pesticides with organic pesticides, say organic farmers, retailers and regulators.

The culture and approach of organic farming is what distinguishes it from conventional farming, organic farmer David Cohlmeier said. He runs Cookstown Greens, which supplies organic produce to restaurants and hotels in Ontario. Organic pesticides are "irrelevant" to his business, he said.

"When you're doing it right, you don't have pest problems," Mr. Cohlmeier said. "We don't use any pesticides because we don't need to."

Organic farmers are only supposed to use natural pesticides as a last resort. Instead, crop rotation, planting habitats for beneficial predators and good soil are an organic farmer's first priority, said Simon Jacques, Ontario representative for organic certification program Ecocert.

"It's certainly a misconception to imagine that organic farmers are farming just the same way as pure conventional farmers but substituting organically approved pesticides and fertilizers for synthetic ones, because that's not what's happening," Mr. Jacques said.

The study is not intended to take an anti-organic stance, study researcher and University of Guelph PhD candidate Christine Bahlai said.

“We’re not attacking the organic industry as a whole,” Ms. Bahlai said. “The question we have is if this is being promoted as the most environmentally friendly way of doing things, then why are the insecticides that are allowed by organic farming not necessarily the most environmentally friendly?”

Prof. Hallett and Ms. Bahlai would like farmers to move toward an idea of sustainable farming, rather than pitting organic and conventional farming head-to-head.

“We need to look at things and pick the ones that have the least environmental impact. It may sometimes be an organic product, and sometimes be a synthetic product,” Prof. Hallett said.

Prof. Hallett and Ms. Bahlai plan on studying the effect of organic and synthetic pesticides next on Ontario apples and landscape plants.

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