

Pesticides not yet proven guilty of causing honeybee declines, new study says

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Honeybee. Credit: Adam Siegel

The impact of crop pesticides on honeybee colonies is unlikely to cause colony collapse, according to a paper in the journal *Science* today. More research is now needed to predict the impact of widely-used agricultural insecticides, called neonicotinoids, on honeybee populations.

UK scientists from the University of Exeter and Food and Environment Agency highlight flaws in previous research (published in *Science*, April 2012) that predicted that neonicotinoids could cause honeybee [colony collapse](#). Neonicotinoids are among the most widely-used agricultural [insecticides](#) and honeybees ingest residues of the pesticides as they gather [nectar](#) and pollen from treated plants.

The previous research has been cited by scientists, environmentalists and policy-makers as evidence of the future impact of these pesticides on honeybees. It is likely that the research was instrumental in the French government's recent decision to ban the use of thiamethoxam, a neonicotinoid that is the [active ingredient](#) of Cruiser OSR, a pesticide produced by the Swiss company Syngenta.

However, the new paper argues that the calculations made in the research were flawed because they failed to reflect the rate at which [honeybee colonies](#) recover from losing individuals.

The previous research, led by French scientist Mikaël Henry, showed that the death rate of bees increased when they drank nectar laced with a neonicotinoid pesticide, thiamethoxam. It calculated that this would cause their colony to collapse. The research published today explains how the calculation may have used an inappropriately low birth rate.

Lead author Dr James Cresswell of the University of Exeter said: "We know that neonicotinoids affect honeybees, but there is no evidence that they could cause colony collapse. When we repeated the previous calculation with a realistic birth rate, the risk of colony collapse under [pesticide exposure](#) disappeared.

"I am definitely not saying that pesticides are harmless to honeybees, but I think everyone wants to make decisions based on sound evidence – and our research shows that the effects of thiamethoxam are not as severe as first thought.

"We do not yet have definitive evidence of the impact of these insecticides on honeybees and we should not be making any decisions on changes to policy on their use. It is vital that more research is conducted so that we can understand the real impact of neonicotinoids on [honeybees](#), so governments can put together a proper plan to protect

them from any dangers that the chemicals pose."

Provided by University of Exeter

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