

Honeybees at risk from Zika pesticides

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Zika – which can cause severe brain defects in unborn children – is spread by mosquitoes, so the insects are being targeted in the southern US where Zika-carrying mosquito species live.

The new research, by the University of Exeter and the University of California, Berkeley, was sparked by a 2016 media report on millions of [honeybees](#) killed by Zika spraying.

Honeybees are not native to the US and most colonies are kept by [beekeepers](#), who play a key role in agriculture by helping to pollinate crops.

By comparing data on bee densities with areas at risk from Zika, the researchers calculated the percentage of colonies that could be affected.

"A colony unexpectedly exposed to pesticide spraying for [mosquitoes](#) would almost certainly be wiped out," said Lewis Bartlett, of the Centre for Ecology and Conservation on the University of Exeter's Penryn Campus in Cornwall.

"Beekeepers in the US move their colonies around to support farmers, so a beekeeper with all their bees in one area at a given time could lose them

all."

Mosquitoes are usually targeted for spraying in summer, when the insects are most active, but this is also the key time for honeybees.

Some states, such as Florida, have well-established mosquito control programmes and systems to limit the effects on unintended targets such as bees.

But the researchers warn other states are less well prepared to organise measures such as warning beekeepers before spraying.

"At the start of this research we spoke to a [beekeeper](#) who was caught unawares and lost all her bees," Bartlett said.

"Beekeeping is a very traditional way of life in the US, with a lot of pride in families who have done it for generations, but many are struggling now.

"Given all the threats facing bees, even a small additional problem could become the straw that broke the camel's back.

"Many beekeepers live on the breadline, and if something like this changes things so beekeeping is no longer profitable, there will be huge knock-on effects on farming and food prices."

People in many countries are rightfully concerned about Zika, but Bartlett said research and preparation were essential before embarking on "expensive and environmentally dangerous" mosquito control measures.

The study found a positive correlation between [honeybee](#) colony density and areas with suitable conditions for Zika – raising the risk of bees being harmed by anti-Zika spraying.

These areas include Florida, the Gulf Coast and possibly the California Central Valley.

The researchers said their study was only possible thanks to data from the USDA and CDC, and regulations overseen by the EPA.

The study focussed on honeybees because being kept by beekeepers means there is more data on them than any other bee species.

Although the findings do not directly translate to other species, Bartlett said honeybees are resilient compared to most bees – so the situation for other species may be similar or even worse.

The paper, published in the *Journal of Apicultural Research*, is entitled: "Identifying regions of risk to honey [bees](#) from Zika vector control in the US."

More information: Lewis J Bartlett et al.

Identifying regions of risk to honey bees from Zika vector control in the USA, *Journal of Apicultural Research* (2018). [DOI: 10.1080/00218839.2018.1494914](#)

Provided by University of Exeter

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