

Study finds common pesticide impairs honey bees' ability to fly

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Researchers have found a commonly used pesticide can significantly impair the ability of honey bees to fly. The pesticide is called thiamethoxam and it's used on crops like corn, soybeans and cotton, along with many vegetable and fruit crops.

James Nieh is a professor of biological sciences at the University of California - San Diego, and an author of a new [study](#).

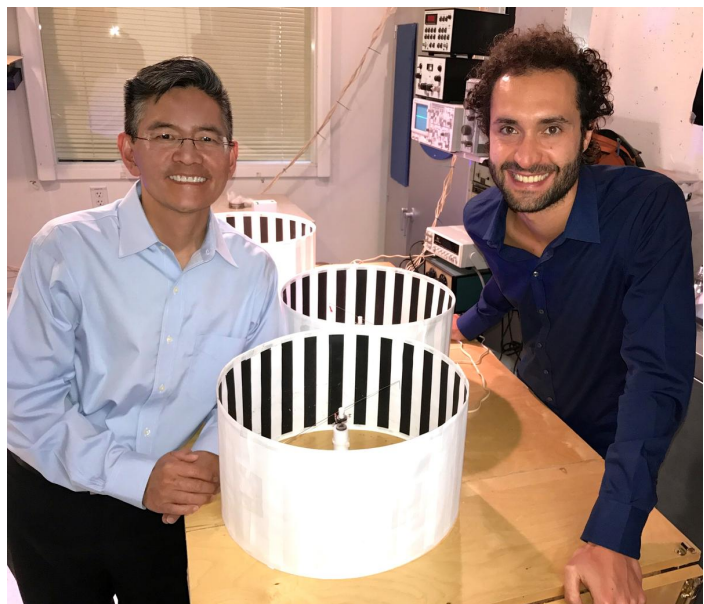
He says he started wondering whether the pesticide could affect honey bee

flight after previous research showed thiamethoxam affected the ability of bees to find their way home successfully.

“So we wondered if it could be that they weren’t being able to get home because they simply weren’t being able to fly very well,” says Nieh.

Nieh says in order to test this in the field, scientists would need to use a tracking technology that doesn’t quite exist yet.

“So we did the next best thing, which is to take it into the lab, and we used an existing technology called a flight mill, which I built and modified to use with honey bees for our particular experiment,” he says.



Simone Tosi is a postdoctoral fellow at UCSD, and the study's lead author. He says next, they'd like to study other bee behaviors.

"And the impact that other stressors have on them. For example, the locomotor abilities of the bee, so how do they move inside a hive, for example, and when they forage on a flower," says Tosi.

Earlier this year, the EPA said in a [preliminary risk assessment](#) that four pesticides, including thiamethoxam, do not pose significant risks to bee colonies, but some kinds of applications could hurt bees:

The assessments for clothianidin, thiamethoxam, and dinotefuran, similar to the preliminary pollinator assessment for imidacloprid showed: most approved uses do not pose significant risks to bee colonies. However, spray applications to a few crops, such as cucumbers, berries, and cotton, may pose risks to bees that come in direct contact with residue. In its preliminary pollinator-only analysis for clothianidin and thiamethoxam, the EPA has proposed a new method for accounting for pesticide exposure that may occur through pollen and nectar.

“I think one thing that the EPA would like to have - and it’s understandable - is what is the effect of these pesticides on whole colonies, not just upon bees in the lab,” says Nieh.

“And I think that’s reasonable, because you want to know what is the actual, realistic effect in the field. However, that is quite challenging for many reasons, including the fact that bees fly over great distances. So when you’re designing experiments to look at the field effect of colonies, you really have to have a vast experiment that covers many square miles.”