

Spider venom may save the bees

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Bees are pictured on a honey gofer in Bucharest on April 4, 2014

Venom from one of the world's most poisonous spiders may help save the world's honeybees, providing a biopesticide that kills pests but spares the precious pollinators, a study said Wednesday.

Bee populations, both wild and captive, are in decline in Europe, the Americas and Asia for reasons scientists are struggling to understand,



with industrial pesticides among the suspected culprits.

Last year, scientists said certain pesticides used to protect crops or <u>bee</u> <u>hives</u> can scramble the brain circuits of <u>honeybees</u>, affecting memory and navigation skills they need to find food, placing entire hives under threat.

The EU has since placed a temporary ban on some of these chemicals.

Now a team led by Newcastle University, England, found that a biopesticide made with a toxin from Australian funnel web spider venom and a protein from the snowdrop plant, was bee-friendly.

"Feeding acute and chronic doses to honeybees, beyond the levels they would ever experience in the field... had only a very slight effect on the bees' survival and no measurable effect at all on their learning and memory," said a university statement.

Neither adult bees nor larvae were affected, said the study published in the journal *Proceedings of the Royal Society B*.

The <u>biopesticide</u> was previously shown not to be harmful to humans, despite being highly toxic to a number of key pests.





Mary Rayner attempts to milk the venom from a deadly funnel-web spider which is common around Sydney with a pipette at the Australian Reptile Park in Sydney on October 1, 2001

Bees account for 80 percent of plant pollination by insects. Without them, many crops would be unable to bear fruit or would have to be pollinated by hand.

The Food and Agricultural Organisation (FAO) says pollinators contribute to at least 70 percent of the major human food crops.

The economic value of pollination services was estimated at 153 billion



euros (\$208 billion) in 2005.

"There isn't going to be one silver bullet," said study co-author Angharad Gatehouse.

"What we need is an integrated pest management strategy and insectspecific pesticides will be just one part of that."

More information: Paper: Novel biopesticide based on a spider venom peptide shows no adverse effects on honeybees, <u>rspb.royalsocietypublishing.or1098/rspb.2014.0619</u>

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