

Beleaguered bees hit by 'deformed wing virus'

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A wing-deforming virus shortens the lifespan of wild honeybees already contending with a startlingly long list of existential threats, researchers said Wednesday.

Spread by microscopic mites, the microbe disrupts bees' foraging and

curtails their lives, experiments confirmed for the first time.

"Deformed wing virus strongly reduced the chances for workers to survive to foraging age," scientists reported in the *Proceedings of the Royal Society B*.

It also "reduced the life expectancy and total activity span" of [infected bees](#), they found.

Bees around the world—especially in Europe and North America—have been decimated in recent years by a mysterious blight called "[colony collapse disorder](#)", in which entire populations disappear or die out.

Research has pointed an accusing finger at agricultural pesticides, viruses, fungi, parasites, malnutrition because of fewer flowers—or some combination of the above.

More than just the survival of the bees is at stake.

Scientists recently calculated that 1.4 billion jobs, and three-quarters of crops, depend on pollinators, mainly bees.

All told, there are some 20,000 bee species that fertilise more than 90 percent of the world's 107 major crops.

At the same time, the United Nations estimates that 40 percent of invertebrate pollinators—mostly bees and butterflies—are at risk of extinction.

Mini tracking devices

Deformed wing virus has previously been recognised as a threat to bees' well-being, compromising their ability to remember where they have

been.

The pathogen is found in most parts of the world; in certain areas up to three-quarters of hives are affected.

It was previously also suspected of affecting flight patterns and lifespan, but evidence was lacking. The new study removes any doubt on this score.

Scientists led by Kristof Benaets from the Laboratory of Socioecology and Social Evolution in Leuven, Belgium, set up an experiment using radiofrequency identification (RFID).

Tiny emitters placed on the bodies of both healthy and virus-infected bees allowed the researchers to follow, and compare, their movements.

"Tracking out-of-hive activity is key in studying the impact of pathogens on honeybee health," the team said.

The virus did not reduce the number or duration of pollen-gathering sorties by [worker bees](#).

But it did cause the insects to begin foraging too young, the experiment revealed.

They were less adept at the task, and died earlier than non-infected [bees](#).

Deformed wing virus "had a strongly negative overall effect," the study concluded.

More information: Covert deformed wing virus infections have long-term deleterious effects on honeybee foraging and survival, *Proceedings of the Royal Society B*, rspb.royalsocietypublishing.org ...

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