

Common bee virus causes bees to forage prematurely

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Honey bee pollination contributes roughly \$15 billion to the U.S. agricultural industry each year, but diseases like deformed wing virus (DWV) can devastate bee health.

DWV is the most prevalent [virus](#) responsible for honey bee [colony](#) losses. It often causes infected bees to forage prematurely, which can cause diminished spatial memory and colony failure. Additionally, these infected foragers may be more likely to spread the virus to neighboring colonies because of their disoriented state.

To find out why DWV has this effect on bees, researchers with the University of Minnesota College of Veterinary Medicine (CVM) collaborated with the University of Illinois and Washington State University.

In a study recently published in the journal *Nature*, researchers found:

- the virus, which localizes and replicates in the sensory and behavioral centers of the brain, causes the bee's brain to function as though the bee is older than it is;
- the virus is infecting glia, non-[neuronal cells](#) in the central and peripheral nervous systems that do not produce electrical impulses—not neurons.

"Our findings could provide new insights into the host-pathogen relationship," said study co-author Declan Schroeder, an associate professor in CVM. "However, more studies are needed to better understand the relationship between the glia-mediated viral response and its impact on bee behavior."

More information: Ian M. Traniello et al. Meta-analysis of honey bee neurogenomic response links Deformed wing virus type A to precocious behavioral maturation, *Scientific Reports* (2020). [DOI: 10.1038/s41598-020-59808-4](https://doi.org/10.1038/s41598-020-59808-4)

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