

Deformed Wing Virus in honey bees transmitted by mites: study

June 7 2012

Researchers in Hawaii and the UK report that the parasitic 'Varroa' mite has caused the Deformed Wing Virus (DWV) to proliferate in honey bee colonies.

This association is now thought to contribute to the world-wide spread and probable death of millions of honey bee colonies. The current monetary value of honey bees as commercial [pollinators](#) in the United States alone is estimated at about \$15-\$20 billion annually

The research conducted in Hawaii by researchers at Sheffield University, the Marine Biological Association, FERA and University of Hawaii, and reported in the journal *Science* (June 8, 2012), showed how Varroa caused DWV – a known viral pathogen – to increase its frequency among honey bee colonies from 10% to 100%. This change was accompanied by a million-fold increase in the number of virus particles infecting each honey bee and a massive reduction in viral strain diversity leading to the emergence of a single 'virulent' DWV strain.

As the mite and new virulent strain of [virus](#) becomes established across the Hawaiian islands the new emerging viral landscape will mirror that found across the rest of the world where Varroa is now established.

This ability of a mite to permanently alter the [honey bee](#) viral landscape may be a key factor in the recent colony collapse disorder (CCD) and over-wintering colony losses (OCL) as the virulent pathogen strain remains even after the mites are removed.

More information: "Global Honey Bee Viral Landscape Altered by a Parasitic Mite," by S.J. Martin, *Science*, 2012.

Provided by University of Sheffield

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