

# Bee scientists force killer mites to self destruct

22 December 2010, By Jennifer Phillips



A bee and Varroa mite.

The blood-sucking Varroa is the biggest killer of honey bees world-wide, having developed resistance to beekeepers' medication over the past decade. It particularly thrives in cold winters when colonies are more vulnerable while huddled together tightly to keep warm.

Now researchers from the Government's National Bee Unit and Aberdeen University have worked out how to 'silence' natural functions in the mites' gene - with the potential to make them self destruct.

Dr. Alan Bowman from the University of Aberdeen said: "Introducing harmless genetic material encourages the mites' own immune response to prevent their genes from expressing natural functions. This could make them self destruct.

"The beauty of this approach is that it is really specific and targets the [mites](#) without harming the bees or, indeed, any other animal."

Dr Giles Budge from National Bee Unit, part of the Food and Environment Research Agency (Fera) said: "This is environment-friendly and poses no threat to the bees. With appropriate support from industry and rigorous safety testing, chemical-free medicines could be available in five to ten years."

In developing this, scientists have used the Nobel-Prize Winning theory 'RNA interference', which controls the flow of genetic information. So far the 'silencing' process has worked with a neutral Varroa gene, which has no significant effect on the mite. But scientists now need to target a gene with the specific characteristics that are perfect to force the Varroa to self destruct.

Tests by other scientists have shown the treatment can be added to hives in bee feed. The bees move it into food for their young, where the Varroa hides.

**More information:** The full report is available at: [www.parasitesandvectors.com/content/3/1/73](http://www.parasitesandvectors.com/content/3/1/73) .

Provided by University of Aberdeen

APA citation: Bee scientists force killer mites to self destruct (2010, December 22) retrieved 1 December 2022 from <https://phys.org/news/2010-12-bee-scientists-killer-mites-destruct.html>

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