

New research: Are global honey bee declines caused by diesel pollution?

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Scientists are investigating a possible link between tiny particles of pollution found in diesel fumes and the global collapse of honey bee colonies.

Professor Guy Poppy, an ecologist, Dr Tracey Newman, a neuroscientist, and their team from the University of Southampton believe that minuscule particles, or 'nanoparticles', emitted from [diesel engines](#) could be affecting bees' brains and damaging their inbuilt 'sat-navs'. They believe this may stop [worker bees](#) finding their way back to the hive.

The team is also investigating the possibility that [nanoparticles](#) are one of a number of stress factors that could lead to a tipping point in bee health, which in turn could contribute to bee colony collapse.

"Diesel road-traffic is increasing in the UK and research from the US has shown that nanoparticles found in its fumes can be detrimental to the brains of animals when they are exposed to large doses. We want to find out if bees are affected in the same way – and answer the question of why bees aren't finding their way back to the hive when they leave to find food," explains Professor Poppy.

Bees are estimated to contribute billions to the world's economy - £430 million a year to the UK alone - by pollinating crops, producing honey and supporting employment. Yet winter losses have led to the loss of tens of thousands of beehives year on year since 2007. The US has seen a 35 per cent unexplained drop in the number of hives in 2007, 2008 and

2009*. Extensive research, including a recent United Nations Report, has so far not identified the cause of bee declines.

The team from the University of Southampton, including biologists, nanotechnology researchers and ecologists will test the behavioural and neurological changes in honey bees, after exposure to diesel nanoparticles.

Chemical ecologist Dr Robbie Girling, adds: "The [diesel fumes](#) may have a dual affect in that they may be mopping up flower smells in the air, making it harder for the bees to find their food sources."

Recent research which has revealed more about the effects of nanoparticles has enabled scientists to investigate this possible link to [bee colony](#) collapse.

Provided by University of Southampton

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