

Pesticide firms dismiss their own study confirming bees are harmed

Ben Webster Environment Editor

Bees are being harmed by some of the most common pesticides, according to a study that has been attacked by the chemical companies that paid for it.

Bayer and Syngenta, which produce neonicotinoid pesticides, have accused the scientists they commissioned of overstating the threat to honeybees and wild bees from their products. Syngenta said the published paper misrepresented the results and Bayer said it failed to reflect the data.

The companies paid \$3 million for the research by the Centre for Ecology and Hydrology (CEH) in Oxfordshire, which conducted the first pan-European field study of the effect on bees of Bayer's clothianidin and Syngenta's thiamethoxam.

The pesticides, which are applied to seeds and avoid the need for repeated spraying of fields, were banned on flowering crops by the European Commission three years ago after laboratory tests showed harm to bees.

The companies said that the laboratory tests used excessive doses and funded the field trials in the hope of demonstrating that their products were safe in real-world use.

The CEH tested the effect on bees of oilseed rape treated with neonicotinoids at sites in the UK, Germany and Hungary. Fields at 33 sites were planted, with some fields sown without the chemicals to act as a control.

In Hungary, they found that worker

Analysis

The debate over the effect on bee colonies of the widespread use of neonicotinoids has profound implications for farmers as well as for the companies that sell the pesticides in a market worth \$1.5 billion a year (Ben Webster writes).

Many farmers stopped planting oilseed rape three years ago when the European Commission

banned neonicotinoids. They believe there is no other viable way of protecting the crop from cabbage stem flea beetle.

Farmers like neonicotinoids because seeds come treated with the pesticide, removing the need to spray crops with pyrethroid insecticides.

The industry-funded study by the Centre for Ecology and Hydrology was supposed to settle the

argument over whether the lethal effects of neonicotinoids on bees in laboratories would be replicated in the field.

The results suggest that other factors can counteract any negative effects of the pesticides.

Research is needed into whether neonicotinoids can safely be used if bee diseases are reduced and farmers leave uncultivated land around crops.

honeybee colony size fell by 24 per cent where clothianidin was used. A similar trend was found in the UK but in Germany the neonicotinoids were found to cause no harm and were even of benefit to bees for a short time.

CEH said the effect in Germany could be due to the bees having a wider range of wild flowers to feed on and also less disease in hives.

The pesticides were also found to damage the reproduction of two species of wild bee: the buff-tailed bumblebee and the red mason bee.

The study, published in *Science*, said:

"Taken together, our results suggest that exposure to neonicotinoid seed treatments can have negative effects on the interannual reproductive potential of both wild and managed bees, but that these effects are not consistent across countries."

A second study, also published in *Science*, found that neonicotinoids damaged honeybee health near corn crops in Canada.

The results come at a critical time because the European Commission is considering a wider ban on the use of neonicotinoids.

Many farmers say the ban has damaged yields or forced them to spend more time and money on spraying

crops several times a season, which could be more harmful to wildlife.

The European Food Safety Authority is reviewing the neonicotinoid ban, and is due to give its verdict this year.

Peter Campbell, Syngenta's head of research collaborations, said the CEH's conclusion misrepresented the data.

He said the full results showed neonicotinoids had no effect in 238 of the 258 potential effects measured. There were nine negative and seven positive results, and four with insufficient data.

He said the positive and negative results could have been random because there was a 5 per cent chance of results not being statistically significant.

Mr Campbell also suggested that the CEH had focused on the negative results to get the paper published. He said: "There is a pressure to get papers published. Any journal, particularly journals like *Nature* and *Science*, it has to be an interesting story."

He said: "We don't get into *Science* and *Nature* with a study which says, for example, no effect of oilseed rape treated with [neonicotinoid] on solitary bees. It's not that interesting a story."

Christian Maus, Bayer's lead scientist for bee care, also questioned the conclusions, saying he was surprised by the "focus on those few points where there was a difference. The differences go in both directions, positive and negative."

CEH rejected the criticism and said "all results derived and published are statistically robust".

A spokesman for *Science* said: "Our editorial staff is dedicated to ensuring a thorough and professional peer review upon which they determine which papers to select for inclusion."



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