

Insecticide-resistant flies 'rubbish' at courting females

May 8 2017



Drosophila sp fly. Credit: Muhammad Mahdi Karim / Wikipedia. GNU Free Documentation License, Version 1.2

Insecticide resistance sounds like a superpower for the average male fruit fly—but there's a catch.

Scientists have found that the single genetic change which protects the flies from the pesticide DDT also makes males smaller, less aggressive

and "rubbish" at courting females.

Resistant males are also more prone to "decamping" - the technical term for giving up midway through a mating attempt.

The University of Exeter researchers were "astounded" that a single allele (a different version of the same gene) could have such a dramatic impact.

"It is amazing that even if all the [genes](#) are exactly the same, having this one gene expressed at a higher level has all these effects," said Professor Nina Wedell, of the Centre for Ecology and Conservation on Exeter's Penryn Campus in Cornwall.

"The expression level of one gene responsible for detoxifying DDT also makes males smaller, less aggressive and rubbish at courting.

"We don't yet know how this comes about."

The researchers studied common fruit flies (*Drosophila melanogaster*), and found that DDT-resistant [males](#) also:

- performed [courtship songs](#) (wing vibration) and chased females at lower rates
- were less likely to follow a courtship song with an attempt to mate
- had a two-fold increase in "copulation latency" (time spent courting before a female accepted them as a mate)
- were less likely to win in competitive mating trials, even if they were larger than their non-DDT-resistant male rivals

The paper, published in the journal *Behavior Genetics*, is entitled: "Pleiotropic effects of DDT resistance on male size and behaviour."

More information: Wayne G. Rostant et al, Pleiotropic Effects of DDT Resistance on Male Size and Behaviour, *Behavior Genetics* (2017).
[DOI: 10.1007/s10519-017-9850-6](https://doi.org/10.1007/s10519-017-9850-6)

Provided by University of Exeter

Citation: Insecticide-resistant flies 'rubbish' at courting females (2017, May 8) retrieved 23 April 2024 from <https://phys.org/news/2017-05-insecticide-resistant-flies-rubbish-courting-females.html>

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