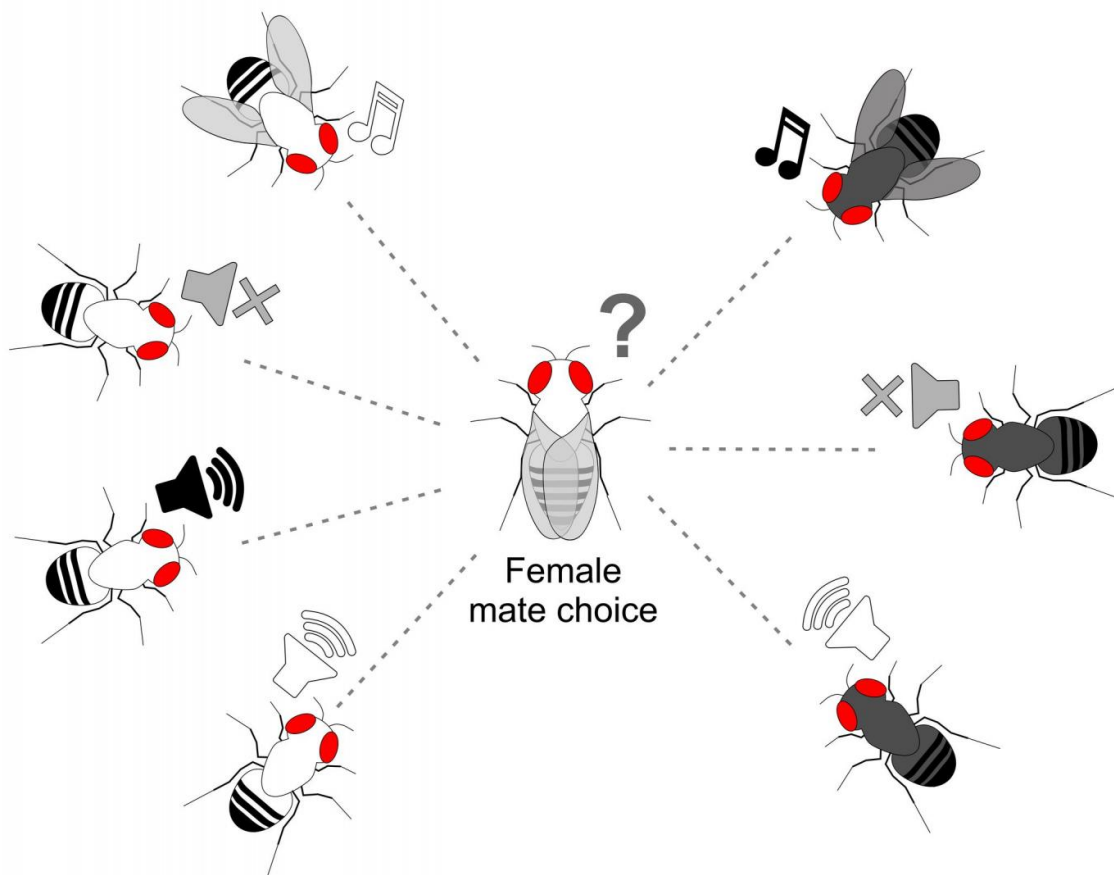


Drosophila buzzatii fruit fly females may use courtship songs to pick same-species mates

May 3 2017



A female mate choice. Credit: Iglesias et al (2017)

Female *Drosophila buzzatii* cluster fruit flies may be drawn to the

specific courtship songs of males of their own species, according to a study published May 3, 2017 in the open-access journal *PLOS ONE* by Patricia Iglesias and Esteban Hasson from the University of Buenos Aires, Argentina.

The *Drosophila buzzatii* [cluster](#) comprises various South American fruit fly [species](#) which live in arid environments and feed on fermenting cacti. Male flies in this cluster attract females by vibrating their wings to produce an unusual diversity of [courtship](#) songs. One hypothesis suggests that courtship songs influence female mate choice decisions, and preferences for different songs could have promoted speciation in this cluster.

The authors of the present study examined the role of courtship [song](#) in [female mate choice](#) in four species in the *D. buzzatii* cluster, as well as one species in a different cluster, *D. martensis*, for comparison. They exposed female flies to wingless, silent males and assessed copulation during either silence, playback of courtship songs from their own species, or playback of songs from another species.

The researchers found that females of three species of the *D. buzzatii* cluster use courtship songs to pick same-species mates, but females of the remaining species use courtship songs to rank mates. When playing courtship songs from a *D. buzzatii* cluster female fly's own species, females of the three species that use acoustic signals to pick same-species mates were more likely to copulate with the male fly, even if he was from a different species. In contrast, when playing courtship songs from other species, only the species that uses songs to rank mates tended to reject the male fly, even if he was from the same species. These effects were not seen in the *D. martensis* cluster species. The influence that the song had on copulation behavior varied between individual females, and future research might investigate why females vary in their preferences and behavior.

Nonetheless, the results suggest that *D. buzzatii* cluster [females](#) do tend to use [courtship songs](#) to help them choose a mate, with a preference for songs produced by their own species. The authors suggest that this supports the hypothesis that such female preferences may have been important in driving diversification and speciation in the *D. buzzatii* cluster.

More information: Iglesias PP, Hasson E (2017) The role of courtship song in female mate choice in South American Cactophilic *Drosophila*. *PLoS ONE* 12(5): e0176119. doi.org/10.1371/journal.pone.0176119

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