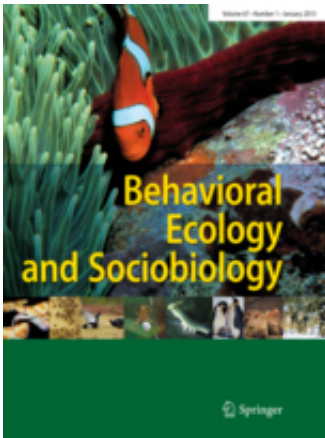


# Lady flies can decide who will father their young

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Females in the animal kingdom have many methods available to them to help bias male paternity. One such process is displayed by *Euxesta bilimeki*, a species of Ulidiid fly, whose females expel and then consume male ejaculate after copulation. A new study by Christian Rodriguez-Enriquez and his colleagues from the Instituto de Ecologia in Mexico has been researching the possible reasons why the female of this species might adopt this behavior. Their study is published in the Springer journal *Behavioral Ecology and Sociobiology*.

Out of the 74 pairs of flies that engaged in copulation in this study, 100 percent of females expelled the ejaculate. The authors therefore contend

that this behavior is probably just a component of the mating ritual of this species. Further investigation found that a quarter of females did not retain any sperm after this expulsion. This would further suggest that it helps the females bias paternity as they seem to be able to choose whether to expel all the ejaculate or just some of it.

Interestingly, a long [courtship](#) before copulation seemed to increase the likelihood of expulsion of all the ejaculate. The authors propose that perhaps the female fly 'gives in' after a long courtship to avoid continuously having to reject the male advances but then expels all the ejaculate to prevent that particular fly fathering its young.

It is possible that females consume ejaculate for its nutrients when there are few available [food sources](#). To assess whether this was the case, the researchers took female *Euxesta bilimeki* flies and fed them either a diet of protein+sugar+water, just sugar+water, just water or nothing at all. These [females](#) were then placed either with males who could ejaculate or with males who no longer had the ability to ejaculate. Thus they could identify whether being well-fed or starved affected the likelihood of consuming ejaculate and also whether it had any [positive health](#) benefits.

There did not seem to be any marked benefit to flies which were fed and watered in consuming the ejaculate. However, flies which were starved of even water lived longer if they consumed the ejaculate than those who were not allowed to consume it. The researchers suggest that this may be because they are extracting fluids from the ejaculates. Given that this species of fly lives in arid areas, this is one possible evolutionary explanation.

The authors conclude: "Overall our study appears to have raised more questions than provided answers. However, we believe that we have uncovered a fascinating study system that will require substantial experimental attention before allowing formulation of conclusive

statements about the function of sperm expulsion and consumption in *E. bilimeki*."

**More information:** Rodriguez-Enriquez, C.L. et al. (2013). Elucidating the function of ejaculate expulsion and consumption after copulation by female *Euxesta bilimeki*. *Behavioral Ecology and Sociobiology*. [DOI 10.1007/s00265-013-1518-5](https://doi.org/10.1007/s00265-013-1518-5)

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