

# **Brown widow male spiders prefer sex with older females likely to eat them afterwards**

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Male brown widow spiders seek to mate with older, less-fertile females who are more likely to eat them after sex. Credit: Lara Sandomirsky, American Associates, Ben-Gurion University of the Negev

Male brown widow spiders seek to mate with older, less-fertile females that are 50 percent more likely to eat them after sex, according to Israeli researchers in a study published in the journal *Animal Behaviour*.

Researchers at Ben-Gurion University of the Negev, The Hebrew University of Jerusalem and The Volcani Center in Israel collected male and female brown widow spiders from central and southern Israel and then positioned the females to give the males the choice of which to approach - immature (sub-adult) or mature (old) females - while they observed the interactions. Immature females are able to mate, store sperm and produce eggs after the final molt to adult stage.

"We originally thought the males would prefer the sub-adult females, as they are more fertile and far less likely to cannibalize them, but we were surprised to discover that was not the case," the researchers said.

The team subsequently investigated whether the males had plugged the genital openings of the females by leaving part of their pedipalps (the male copulatory organs) inside the females. By plugging the openings, a male may discourage the female from mating again with another male. If this occurred more frequently with older females, that would be advantageous for the male. But that was not the case.

"Males don't seem to be behaving in their own self-interest and suffer a twofold cost - fewer offspring and no opportunity to mate with another female," the researchers say. "One possible explanation is that older [females](#) are manipulating the males by using strong signals to attract them, a hypothesis that remains to be tested."

The study is part of the M.Sc. thesis of Shevy Waner of The Hebrew University of Jerusalem (HU). She was advised by Prof. Uzi Motro from the Department of Ecology, Evolution and Behavior and the Federmann Center for the Study of Rationality at HU, and Prof. Yael Lubin from

the Marco and Louise Mitrani Department of Desert Ecology at Ben-Gurion University, and Prof. Ally Harari of the Department of Entomology at The Volcani Center.

**More information:** Shevy Waner et al, Male mate choice in a sexually cannibalistic widow spider, *Animal Behaviour* (2018). [DOI: 10.1016/j.anbehav.2018.01.016](https://doi.org/10.1016/j.anbehav.2018.01.016)

Provided by American Associates, Ben-Gurion University of the Negev

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