

Context-dependent male mate choice in western mosquitofish



Mate choice

 Mate choice: non-random mating, usually based on preferences for certain traits in a partner

- Traits usually increase





fitness

Research biased towards

choosy individual's

female choice

My question

- Poeciliidae used to study mate choice
- Gravid spot: dark spot on female abdomen
 - Associated with
 - fecundity



Research question: Do male mosquitofish show preference for gravid spot size?

Hypothesis: Males prefer larger gravid spots.

Methods

- Male paired with 2 random females
- 20-min recording
- Fish photographed after
- Counted male copulation attempts towards each female
- Measured gravid spot size in photos





Photo by Doriane Weiler

Male preference scores



Male preference score =

Attempts toward large spot female

Attempts toward small spot female

Pooled data: Is there preference for



larger gravid spots?

- No support for hypothesis
- Evidence for preference, but unexpected direction
- Other explanations?

Degree of difference in female spots

MALE LARGER SPOT FEMALE

SMALLER SPOT FEMALE

















LARGE SPOT DIFFERENCE







Degree of difference results



Male preference score differed from zero when the degree of difference was large.

Males preferred smaller spots.

*P < 0.01

Conclusions

• Evidence for male preference

- Don't generalize about behavior

- Preference for degree of difference likely related to cognition
 - Males must be able to distinguish
- Results due to species generalization or method of analysis
 - Ideally use mixed-effects model

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