Predation selection trial protocol

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This is a protocol to determine if Chaoborus preferentially feed on infected or uninfected Daphnia.

Laura Lopez, Meghan Duffy 2022. Predation selection trial protocol.
protocols.io
https://protocols.io/view/predation-selection-trial-protocol-b5m8q49w

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Predation Selection Trial Protocol

L. K. Lopez

Purpose: To determine if *Chaoborus* preferentially feed on infected or uninfected *Daphnia*

1. Rear Mid-37s in 150 mL beakers filled to 120mL with filtered lake water at a density of 20 animals (age 0 days) per beaker.
2. At 9 days of age, expose half of the beakers to *Metschnikowia* spores at a concentration of 200 sp/mL
3. Expose the control beakers to the same volume of liquid as the infected beakers, but milliQ water.
4. 10 days following exposure to spores (19 days of age) check animals for infection
5. Conduct selection trials when *Daphnia* are 19 days of age (10 days following spore/milliQ water

exposure).
6. On day of trial set-up, photograph a subsample of the infected and control animals for later body size measurements.
7. In clean 150 mL beakers filled to 120 mL, place 10 control (uninfected *Daphnia*) and 10 infected *Daphnia* in each individual beaker
8. Add one *Chaoborus* (preferably 4^{th} instar, but otherwise 3^{rd}).
9. Place beakers in incubator at 20C and leave in the dark for 24 hours.
10. After 24 hours, remove *Chaoborus* and after examining daphnia under the microscope, identify how many infected and uninfected animals remain alive. Record this data.
11. Goal replicate number: minimum 10, preferably 20.
12. Use data to calculate Chesson's alpha
13. Photograph *Chaoborus* and subsample of *Daphnia* used in the experiment to account for differences in predator gape size and prey size.