

Energy use in parasitic wasps: Slow living, long life?

(MSc-Internship at University of Rennes, France)



Background

Storage of lipids is essential for survival and reproduction in most organisms, because it enables them to anticipate periods with reduced food availability. Parasitoids appear to be an exception to this rule, since several parasitoid species have been found unable to produce lipids as adults. Parasitoids are insects that live as parasites inside a host during larval development, eventually killing the host, while they are free-living as adults to search for new hosts. The parasitic larval lifestyle might allow these wasps obtain a sufficient amount of lipids from their host, which should last throughout their adult life.

This means lipid reserves are a limited resource for parasitoids and they are expected to use them only sparingly. One way to do so would be to lower their pace of living, or their metabolic rate. A low metabolic rate should enable them to extend their life span, but metabolism is also strongly dependent on temperature.

In this project, you will study the differences in life span and metabolic rate of four parasitoid species which all use the same host species. The experiments will take place under different temperatures, because in ectotherms higher temperature leads to a higher metabolic rate

Approach

- Perform experiments under controlled temperature conditions
- Measure metabolic rate of various parasitoid species
- Obtaining experience in designing experiments for testing scientific hypotheses

Supervision and information

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