

THE REPRODUCTIVE POLYPHENISM IN THE PEA APHID:

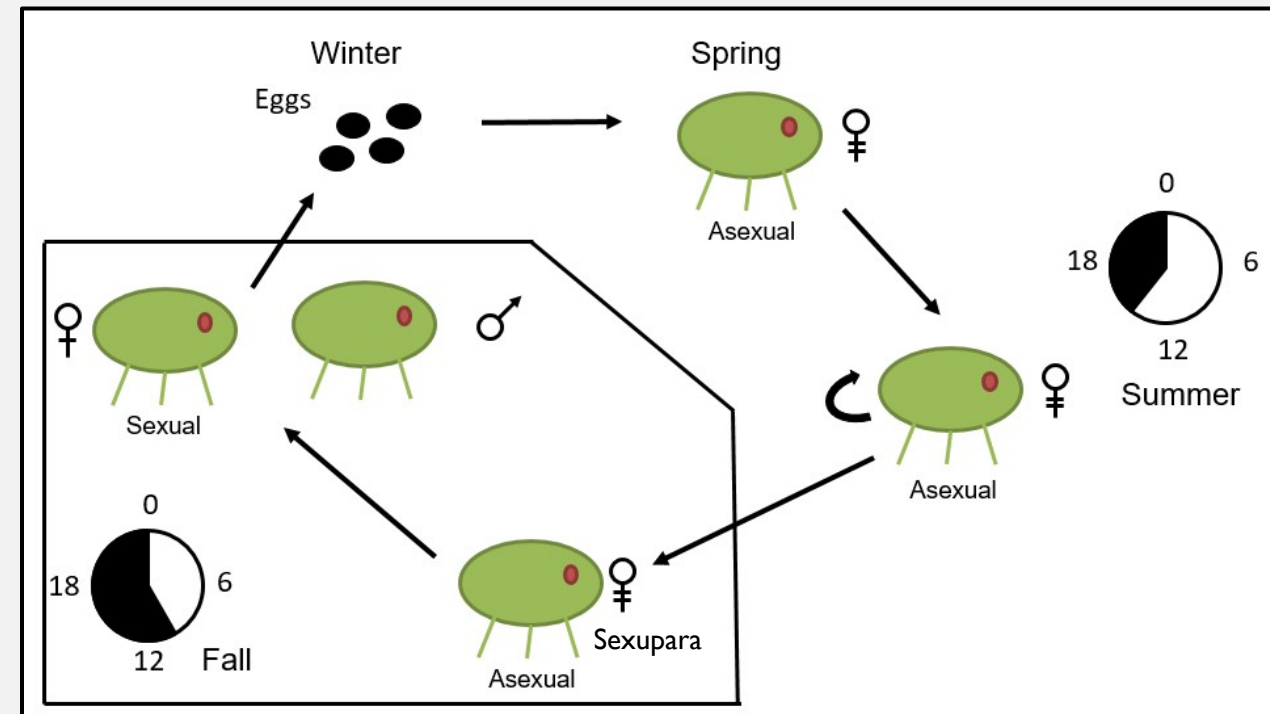
WHAT ROLE DOES JUVENILE HORMONE PLAY?

By Emma Ecker



PEA APHID REPRODUCTIVE POLYPHENISM

- In the summer months aphids reproduce asexually, but in the fall, special asexual aphids (sexuparae) give birth to females and males that reproduce sexually
- The environmental cue is night length, but the mechanism is unknown
- JH is a candidate for the maternal signal due to:
 - Correlative evidence
 - Sufficiency evidence



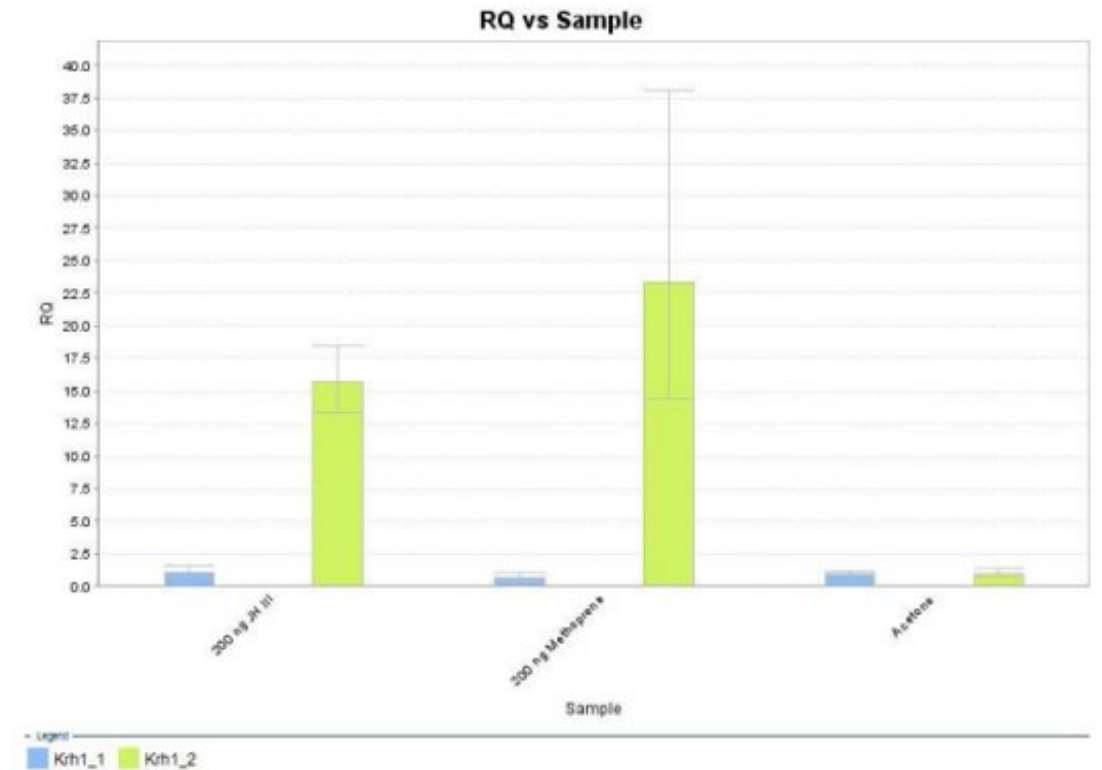
PEA APHID LIFECYCLE

Lees 1964, Ishikawa et. al 2012, Hardie & Lees 1985



DOSAGE EXPERIMENT

- Kr-hI has been shown to be downstream of JH
- Two Purposes:
 - To confirm that Kr-h1 expression changes when JH levels change
 - To see if either paralogue in the Pea Aphid is a better measure of JH
- Repeat Julia's experiment but with a wider range of JH dosages administered



mRNA LEVELS OF KR-H1 PARALOGUE 1 AND 2

- Comparing mRNA levels of Kr-h1 between Long Night (LN) and Short Night (SN)
- (Tentative) results: No correlation
- Concerns:
 - High levels of variation
- Going forward:
 - analyze the rest of data
 - redo this experiment with new assays

