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Introduction

Immature development and survival of *Ceratitis capitata* (Diptera: Tephritidae) are greatly affected by temperature and host fruit species. Additionally, the endosymbiont *Wolbachia pipientis* induces several alterations on the bio-demographic traits of its hosts, including transinfected ones, such as *C. capitata*. However, little is known on how immature development under different conditions (temperature, nutrition) may affect the demographic traits of emerging adult medflies.

Materials and Methods

Laboratory conditions: Temperature: 15, 25, 30°C, Humidity: 45 ± 5% R.H, Photophase: L14:D10 (starting at 07:00)

Flies used: F9: wildish population, Benakeio: Laboratory strain, *Wolbachia* infested: Benakeio line carrying *wCer2* and *wCer4* *Wolbachia* strains

Host fruit: Apples - Golden Delicious cultivar and bitter oranges

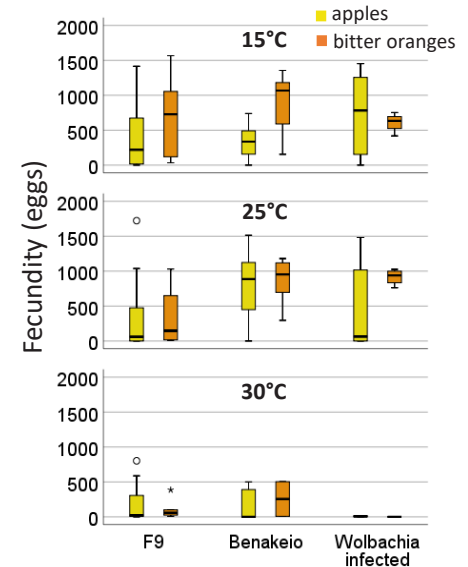
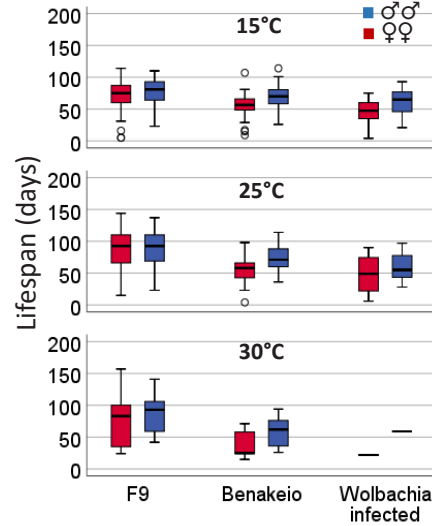
Experimental procedure: First instar larvae were artificially implanted in fruit and held in three different temperatures until pupation. Emerging adults were paired in plastic cages (400ml) with ad libitum adult diet and artificial oviposition substrate, at 25 °C

Observation taken: Adult mortality and female fecundity were recorded daily



Fig.1: Artificially implanted apples (A), and bitter oranges (B) with *C. capitata* larvae. Host fruits were kept individually in plastic containers, on a layer of sterilized sand, until pupation.

Results



Survival analysis: Cox regression

Factor	Significance
<i>C. capitata</i> strain	✓
Host fruit	✗
Temperature	✓
Sex	✓
Strain*temp.	✓



Fecundity: GLMs

Factor	Significance
<i>C. capitata</i> strain	✓
Host fruit	✓
Temperature	✓

- Different fruits hosting immature development affect the fecundity but not the longevity of emerging adults
- Temperatures acting during larval development differently affect the longevity of wild and laboratory strains
- *Wolbachia* infection reduces the longevity of adults that were exposed in high temperatures as immatures