

The Effect of Temperature on the Development and Life Cycle of the Melon Fruit Fly (*Zeugodacus cucurbitae*)

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INTRODUCTION & AIM

The melon fruit fly, *Zeugodacus cucurbitae* (Coquillett), is a major pest of cucurbits, causing 30–100% yield losses depending on host and seasonal conditions (Khan *et al.*, 2022)

Understanding its biology under different temperature regimes is crucial for predicting pest and lifecycle adaptations

The study investigates the developmental biology of *Z. cucurbitae* (Coquillett) at 15°C, 25°C, and 35°C under 75% ($\pm 5\%$) relative humidity

The objective is to develop effective, temperature-specific pest management strategies

MATERIALS AND METHODS



1. Infested fruits were collected, incubated on soil, and pupae collected after 5–6 days into glass tubes.

Male and female adults were paired in controlled conditions

Paired adults were provided with a 5% honey solution as a food source

Females laid eggs in suitable host fruits

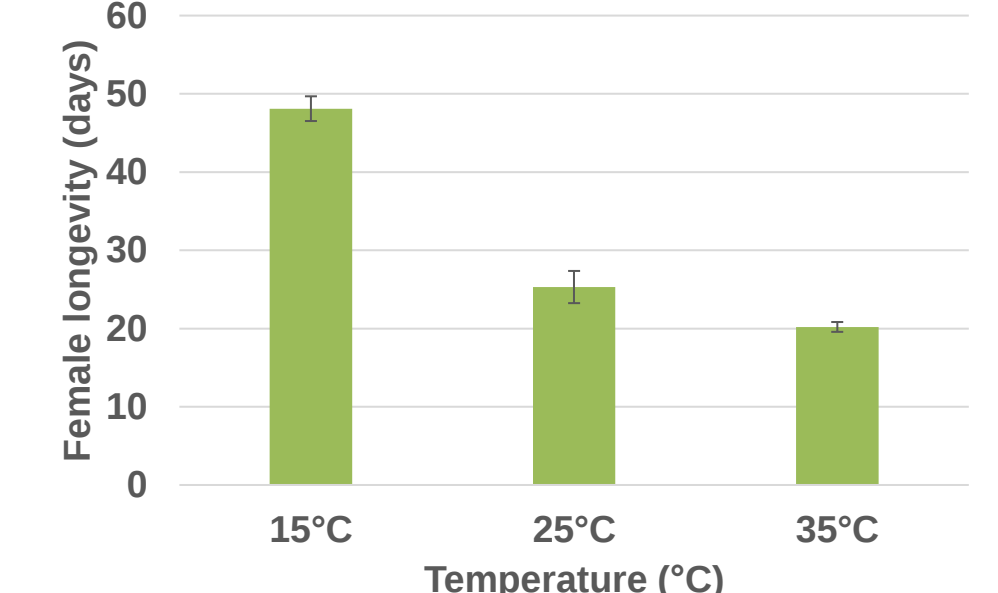
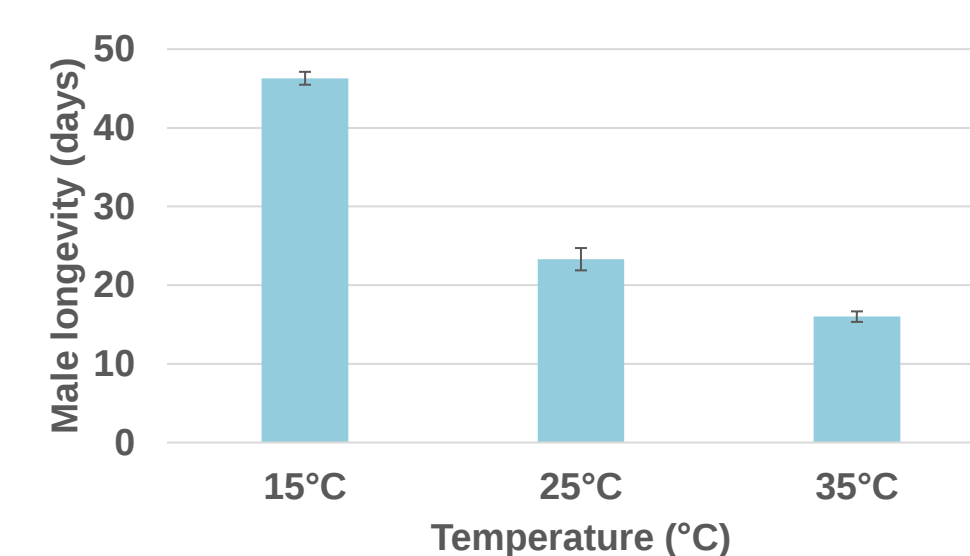
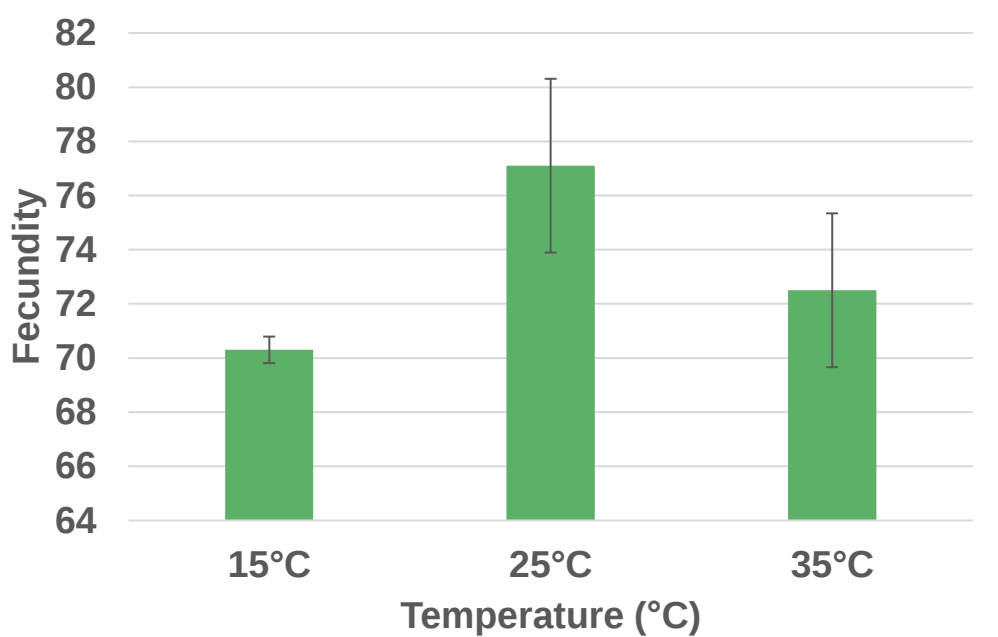
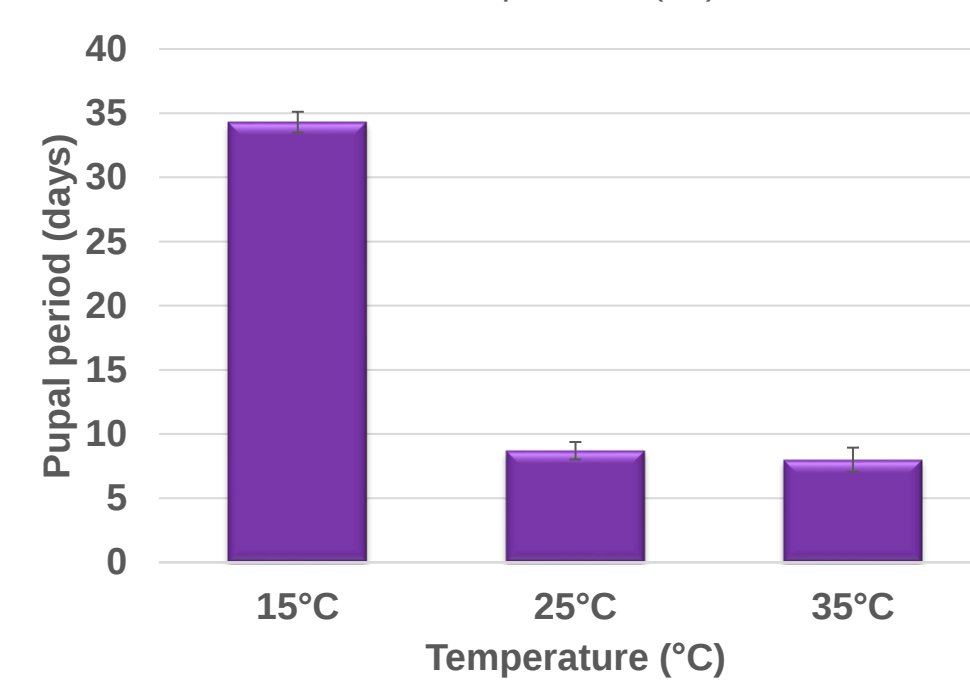
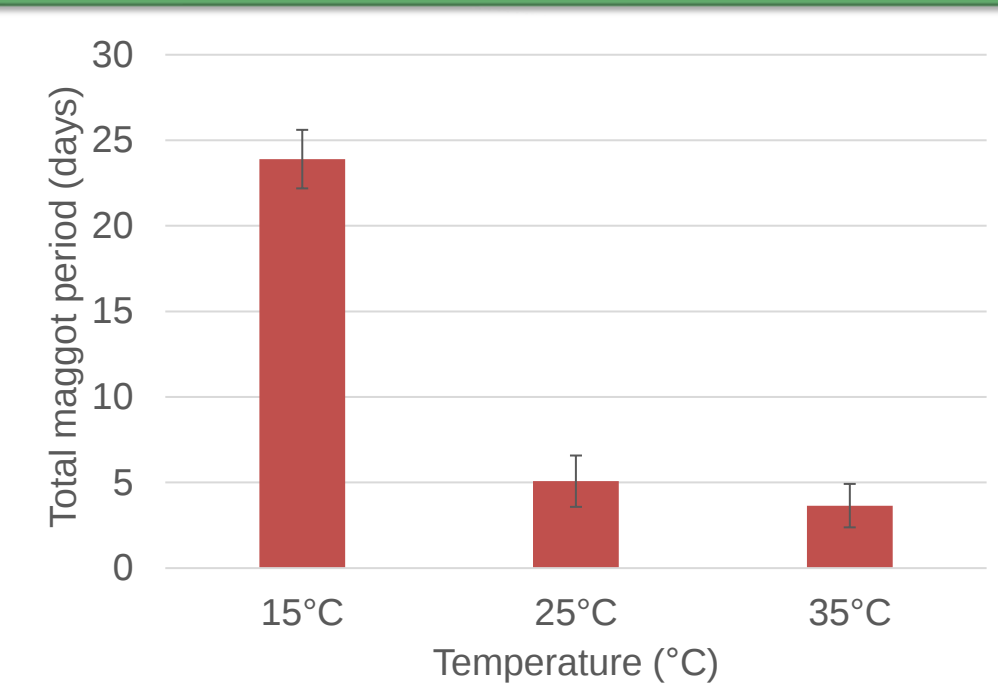
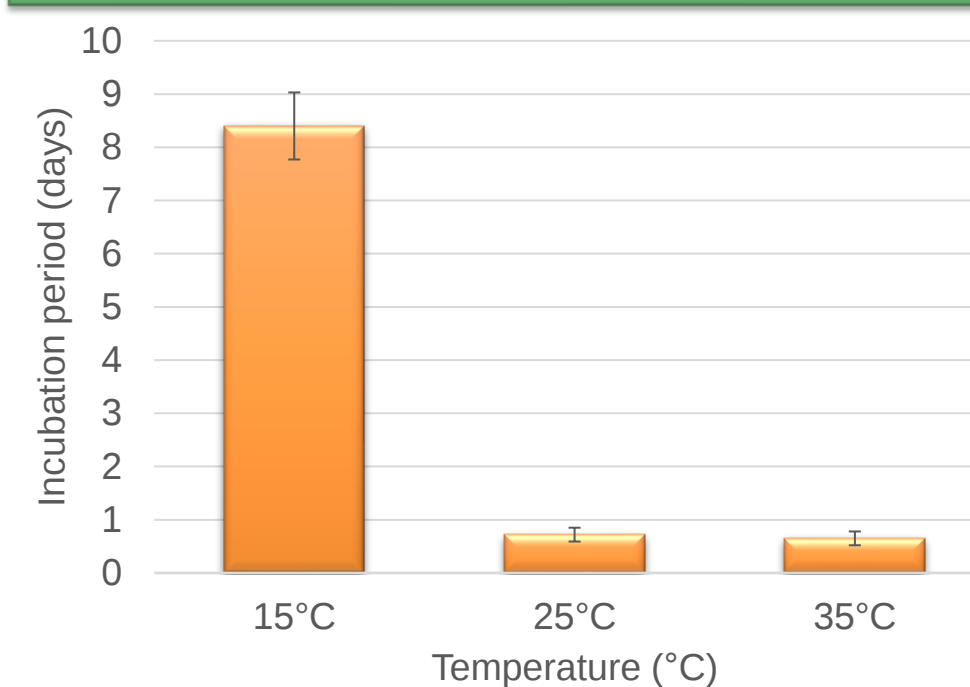
Eggs were collected carefully from the infested fruits

Collected eggs were transferred to cucumber pulp and slices

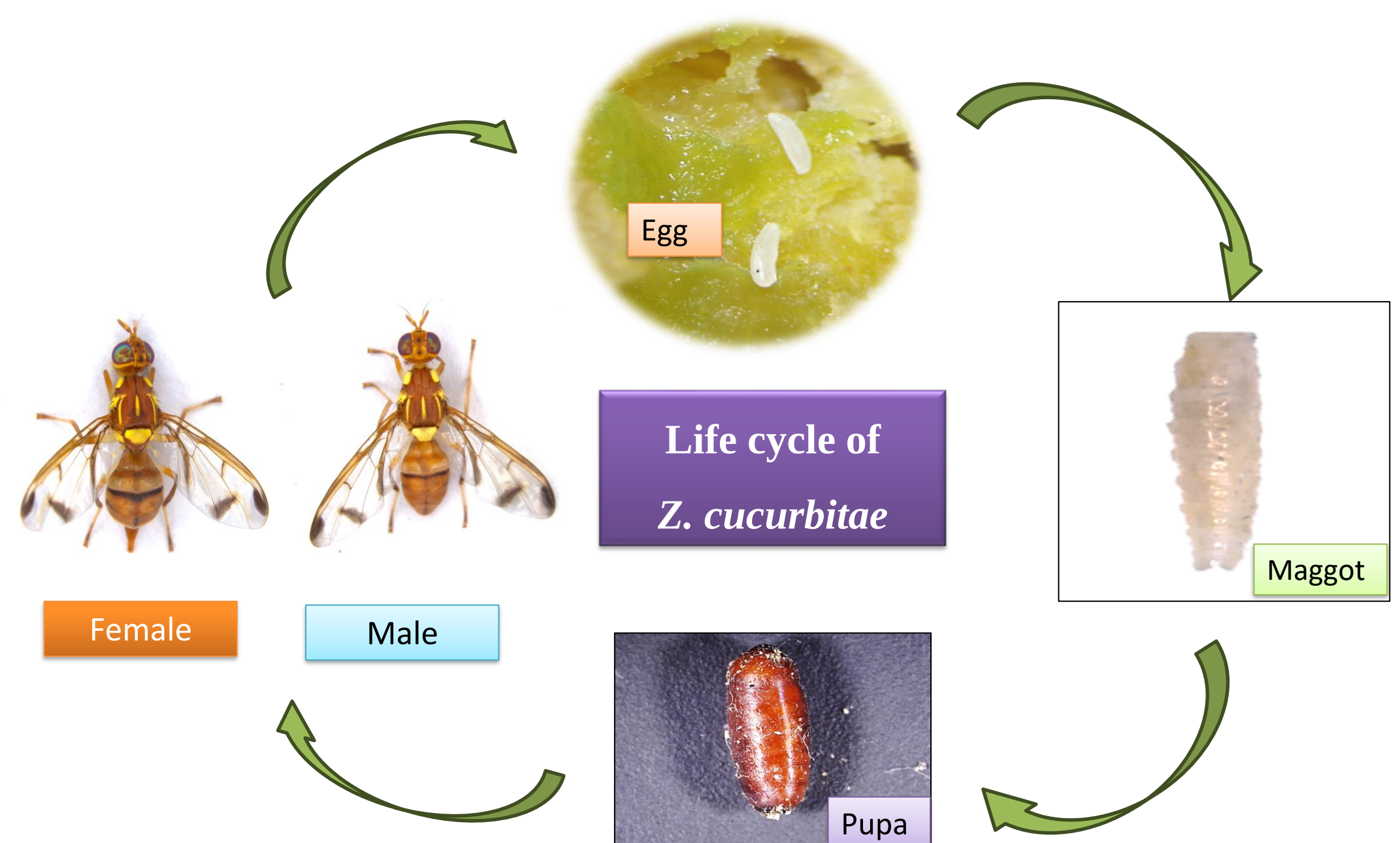


3 Cultures were maintained under controlled laboratory conditions in the Department of Entomology at CCS HAU, Hisar.

RESULTS & DISCUSSION



The present study observed a male-oriented sex ratio in the melon fruit fly, with values of 1:0.64, 1:0.74, and 1:0.76 at 15°C, 25°C, and 35°C, respectively.



CONCLUSION

Understanding the temperature-dependent biology of *Z. cucurbitae* (Coquillett) is key to developing targeted and effective management strategies for cucurbit protection.

REFERENCES

Khan, M. A., Mahmood, R., Javed, M., & Ashfaq, M. (2022). Effect of temperature on the development and survival of *Zeugodacus cucurbitae* (Diptera: Tephritidae): Implications for pest management. *Journal of Insect Science*, 22(3), 1–8.