

Marula flies can take the heat and the chill: Upper and lower lethal temperatures for *Ceratitis cosyra* (Walker) (Diptera: Tephritidae)

Dylan Pullock¹, Kévin Malod¹, Christopher W. Weldon¹

¹ Department of Zoology and Entomology, University of Pretoria, Hatfield 0028, Pretoria, South Africa



A. Coetzer

Background

The marula fly is an Afrotropical species of phytosanitary concern. Its development is temperature-dependent, but thermal tolerance needs definition

Approach

Vials of ten flies ($n = 5$ for each sex) were exposed to test temperatures for 2 hours. Upper and lower lethal temperature (ULT and LLT) were estimated using fitted models and defined as causing 50% mortality.

Significance

Temperature, but not sex, significantly affected survival. The -5.8°C LLT and 42.9°C ULT is a slightly wider tolerance range than recorded in other *Ceratitis* species [1]. Due to this wider range, *C. cosyra* may not be as affected by changing climate as other *Ceratitis* species.

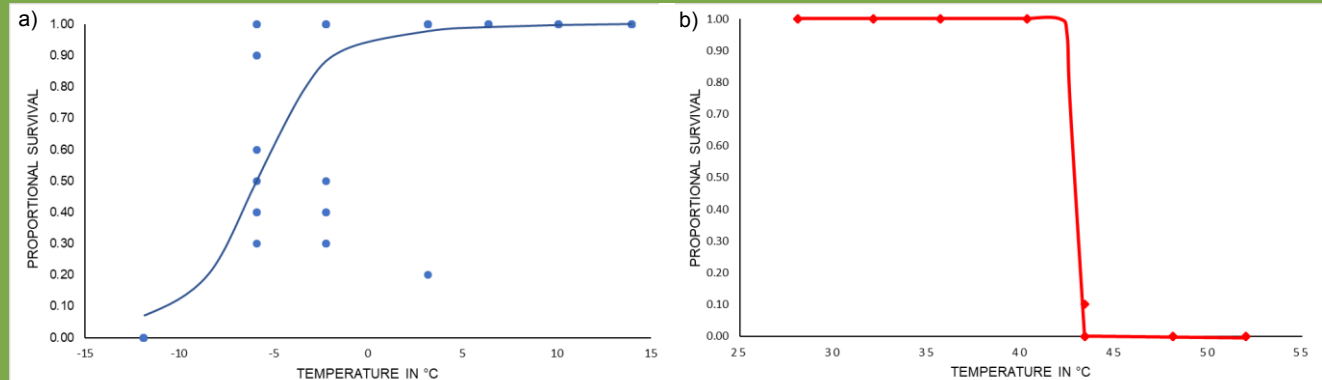


Figure 1. Proportional survival of both sexes of *C. cosyra* after 2 hours of exposure to a) low temperatures ranging from -10 to 14°C and b) high temperatures ranging from 28 to 52°C . Survival was recorded after 24 hours.

References

- [1] NYAMUKONDIWA, C., KLEYNHANS, E. & TERBLANCHE, J.S. 2010. Phenotypic plasticity of thermal tolerance contributes to the invasion potential of mediterranean fruit flies (*Ceratitis capitata*). *Ecological Entomology* **35**: 565-575.



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHIYA PRETORIA

