

# Observations on the potential of spiders as natural enemies of *Trioza erytreae* (del Guercio, 1918; Hemiptera: Triozidae) in the citrus agroecosystem in Portugal

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**Abstract:** The “citrus greening disease” or huanglongbing is caused by the Gram-negative bacterium *Candidatus liberibacter* spp. One vector of HLB, the African citrus psyllid *Trioza erytreae* (del Guercio, 1918), was recorded for the first time in 2014 in mainland Spain and since then it spread throughout the Iberian Peninsula. Measures against *T. erytreae* include chemical treatments and quarantine although eradication programmes have been of limited success or even failed. The biological control of *T. erytreae* has been little developed yet. Among natural enemies, spiders may encompass a promising group of predators. The objective of this work was to assess the potential of spiders as natural enemies of *T. erytreae*. A *Citrus limon* orchard was selected in northwestern Portugal in the area colonized by *T. erytreae*. A total of 100 webs (50 above and 50 below 1.5m) were visually inspected throughout the orchard in August 2020. The family of the web-builder, web size, number of adults of *T. erytreae* captured by each web, and the temperature and humidity were registered. Temperature and humidity did not significantly differ between the two vertical strata. Web size was significantly higher in the lower strata whereas the number of captured adults of *T. erytreae* was significantly higher in the upper strata. The dominant family in the upper strata was Theridiidae corresponding with the most successful webs capturing adults of *T. erytreae*. Our results suggest that web architecture was the only factor driving the number of captured adults of *T. erytreae*. Thus, space web builders could be the most successful natural enemies of *T. erytreae* among aerial web builders.

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