

# Monitoring the Bronze bug *Thaumastocoris peregrinus* (Heteroptera: Thaumastocoridae): Effect of trap placing.

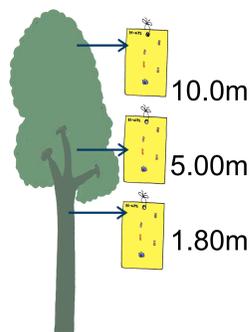
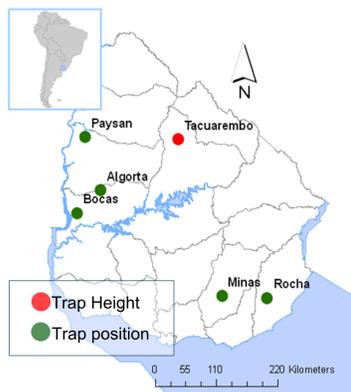
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## Introduction

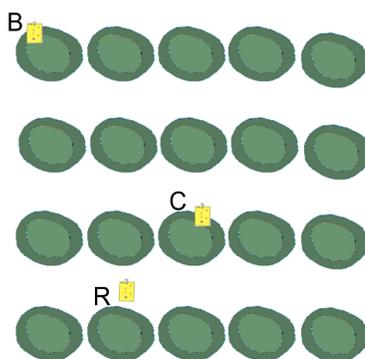
The Bronze bug, *Thaumastocoris peregrinus* Carpintero & Dellappé, is a major emerging pest of eucalypt production in South America. It feeds on several *Eucalyptus* species, leading to lost of available surface for photosynthesis, defoliation, and even tree death (1-3). This insect has been present in the region since 2006 (1) invading Argentina, Brazil, Chile, Paraguay and Uruguay (2-3).

Yellow sticky cards have been installed for monitoring purposes in Uruguay. We studied the performance of traps placed at different heights and in different parts of the stand in relation to captures. We attempted to answer the question: are traps placed on the trunk in the stand border at 1.80 m acceptable for *T. peregrinus* monitoring purposes?

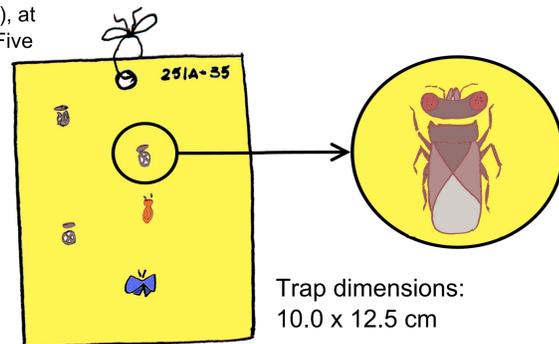
## Material & Methods



2. Yellow cards were placed at 1.80 m in 3 different positions: on the trunk at the border of the stand (B), at the centre of the stand (C) and between rows (R). Five monitoring stations were selected, containing *E. globulus* and *E. camaldulensis*. Traps were replaced monthly.



3. Traps were taken to the lab to count adults.



Trap dimensions: 10.0 x 12.5 cm

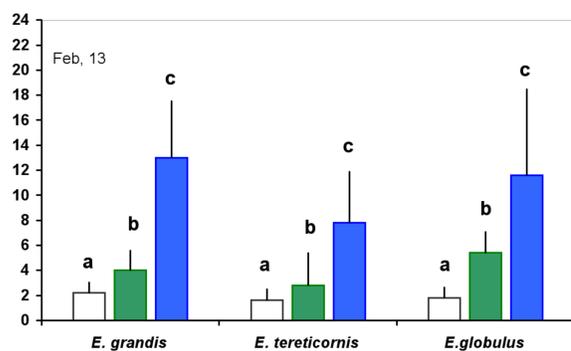


1. Yellow cards were hung at 3 different heights in a mixed stand of *E. globulus*, *E. grandis*, and *E. tereticornis* (5 trees x 3 heights x 3 species). Traps were replaced weekly for a month.

4. Two-way ANOVA (eucalypt species x height) of individuals captured (square root transformation) for each date. Tukey-Kramer test for *a posteriori* comparisons. Kruskal Wallis test (individuals captured x trap position) of monitoring stations for each month. All the tests were run in statistical package R (<http://www.r-project.org>).

## Results

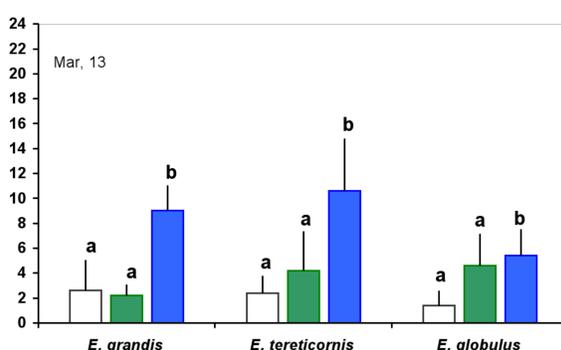
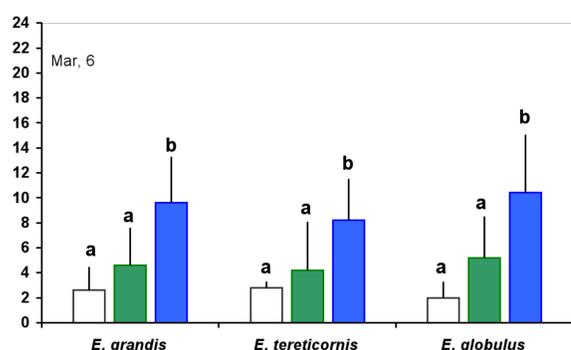
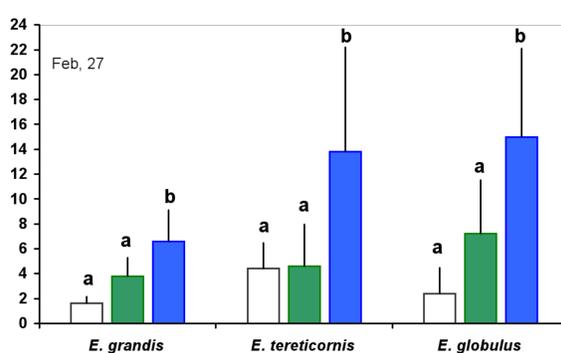
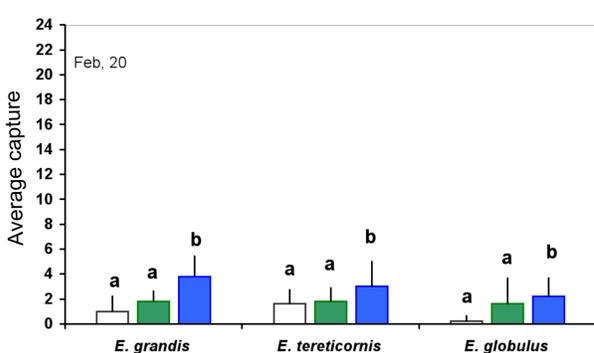
### Trap Height



Total traps	225
Total individuals	1093
Average ind. (1.80 m)	2.04±0.32
Average ind. (5.00 m)	3.91±0.56
Average ind. (10.0 m)	8.63±1.57

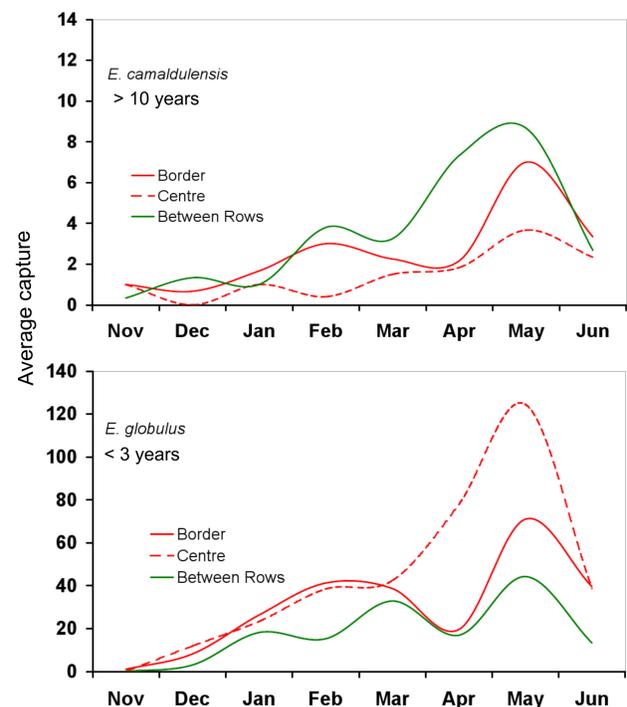


Traps placed at different height significantly varied in the number of individuals captured. Captures were significantly higher in traps placed at 10 m (Tukey test  $p < 0.05$ ) for all collection dates.



Average capture of *T. peregrinus* in yellow traps hung at 1.80m (white), 5.00 m (green), and 10.0 m (blue) at 5 collection dates. Equal letters indicate no significant differences (Tukey test,  $p=0.05$ ).

### Trap position



No significant differences in captures were detected by Kruskal Wallis tests from traps placed in different parts of the stand, for any collection date.



Evolution of average capture of *T. peregrinus* in yellow traps placed in different parts of the stand.

## Discussion

Traps placed at 10 m capture more bronze bug individuals:

- \* Higher concentration of adult foliage;
- \* Flying ability? (Flight performance of *T. peregrinus* yet to be studied).

Traps placed at 1.80 m height underestimate abundance of individuals but:

- \* Differences among heights remain stable in all sampling dates;
- \* Logistical impediments to put traps higher than 1.80 m.

We consider 1.80 m an acceptable height for trap position in the monitoring network. Average height of the stand and average height of the beginning of the crown must also be recorded.

To date no association has been inferred from data collected between trap position in the stand and *T. peregrinus* captures. Additional research is required to understand population distribution within stands.

## References

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- Martínez, G. & Bianchi, M. Primer registro para Uruguay de la chinche del eucalypto, *Thaumastocoris peregrinus* Carpintero y Dellappé, 2006 (Heteroptera: Thaumastocoridae). *Agrociencia* 14, 15-18 (2010).
- Wilcken, C. et al. Bronze bug *Thaumastocoris peregrinus* Carpintero and Dellapé (Hemiptera: Thaumastocoridae) on Eucalyptus in Brazil and its distribution. *Journal of Plant Protection Research* 50, 201-205 (2010).

