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SECONDARY CHEMISTRY EFFECT OF *Eucalyptus* spp. ON THE FEEDING PREFERENCE OF *Thaumastocoris peregrinus* (HEMIPTERA: THAUMASTOCORIDAE).

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ABSTRACT: The bronze bug, *Thaumastocoris peregrinus*, a relevant pest of eucalyptus crops, is a native insect from Australia whose first presence was recorded in Uruguay in 2008 and in other countries even before. *T. peregrinus* feeds on eucalyptus leaves, piercing and sucking the sap, causing the loss of photosynthetic surface area, defoliation, and even tree death. In this work, we present the results of feeding preference tests among four eucalyptus species that are present in Uruguay and not previously reported. Mated females were offered the option of 2 leaf pieces (6cm² each) and the number of fecal drops (72h) was recorded. A feeding preference index (FPI) was calculated as: FPI=Number of fecal drops on leaf 1/Total number of fecal drops. Besides, secondary metabolites from the leaf parenchyma of the four species tested were extracted with dichloromethane/H₂O and a mixture of CDCl₃/D₂O. These extracts were analyzed by GCMS (dichloromethane extracts) and ¹H-RMN (CDCl₃ and D₂O extracts). From the preference tests, species were classified as non-preferred (*E. robusta*), intermediate (*E. globulus*) and preferred (*E. tereticornis*, *E. grandis*). The metabolomic analyses run on a joined matrix (26x4545) of the ¹H-RMN data showed that the four species can be differentiated (Random forest classification showed excellent prediction of species, with a 0% out of bag (OOB) error rate). A subsequent analysis incorporating the preference classification also showed differences among secondary metabolites (Random forest, 0.04% OOB error rate). The metabolites with higher variable importance in this analysis are still under investigation. The GCMS results showed that the four species are differentiated by their content of 1,8-cineol and *p*-cymene, 2 metabolites previously correlated with the resistance/preference in other species (ANOVA, with post-hoc comparisons $p < 0.0001$): while *p*-cymene was up-regulated in the preferred *E. tereticornis* (0.6mg/100mg of leaf), 1,8-cineol was in the intermediate specie (*E. globulus*, 3.2mg/100mg).