

Birds as potential suppressing agents of eucalypt plantations' insect pests

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Abstract

Eucalyptus L'Hér. plantations are among the most widespread forest plantations and can be damaged by several insect pests. Birds are known to play key roles in top-down control of insect pests. However, virtually nothing is known regarding the interaction of birds and eucalypt associated insects. We developed a molecular assay to detect predation on three of the most widespread eucalypt pests, *Gonipterus platensis* Marelli (Coleoptera: Curculionidae), *Ctenarytaina spatulata* Taylor (Hemiptera: Aphalaridae), and *C. eucalypti* (Maskell 1890) and one parasitoid, *Anaphes nitens* (Girault) (Hymenoptera: Mymaridae). We were interested in understanding the potential role of birds as suppressing agents of Eucalyptus insect pests and the bird traits driving their predation. For this, we analysed 294 fresh faecal samples from 29 bird species. We detected the presence of these Eucalyptus insects in 23% of the samples. We found no relationship between the local abundance of the target pests and their consumption by birds, except for *G. platensis* adults, for which we found a positive correlation. We also found that *A. nitens* is more often detected in birds that are not mainly insectivorous but the detection rates of other eucalypt insects were not affected by either bird body size, main diet type or foraging strata. We show that bird communities are feeding on several eucalypt pests, and despite also preying on the main *G. platensis* antagonist (*A. nitens*), this pest is only of economic concern when *A. nitens* is not present, suggesting that birds might have an overall positive effect on Eucalyptus plantations.