



XIII Congresso de ECOLOGIA

III International Symposium of Ecology and Evolution

Múltiplas ecologias: evolução e diversidade

08 a 12 de outubro de 2017 • UFV - VIÇOSA | MG

CAN FRUIT HANDLING BY BIRDS AFFECT SECONDARY DIASPORE REMOVAL? AN EXPERIMENTAL VIEW IN CAMPO RUPESTRE

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Tema/Meio de apresentação: Interações ecológicas/Oral

The way frugivores handle diaspores and where they deposit them can directly affect seed fate, including both patterns of predation and secondary seed dispersal. These effects remain unclear for tropical grassland species, such those found in campo rupestre ecosystems in south-eastern Brazil. Here we present results from a field experiment to evaluate the effects of handling by birds and dispersal distance on the removal rates of diaspores of *Miconia irwinii* (Melastomataceae). We conducted randomized block factorial experiment varying the way handled diaspores are dropped on the ground by avian frugivores (cleaned seeds, seeds embedded in bird feces, within beaked fruits, and within intact fruits), varying the distances (below parent plant and 25 meters distant), and varying the accessibility to vertebrate (exclusion and open access). We established 12 removal stations for each treatment and monitored diaspore removal during 48 hours. The removal of seeds was low with no significant differences between the treatments. For fruits, we found higher removal rates underneath the parent plants, but no differences between other treatments. We also conducted focal observation on diaspores and found 16 species of ants interacting with them. The ants *Camponotus rufipes*, *Cephalotes pusillus*, and *Pheidole radoszkowskii* were the most frequent species. The former was the most frequent in seed removal events, dispersing seeds to a maximum distance of three meters. However, ant species that preferred seeds in bird feces are mainly interested in feces instead of seeds, acting as seed dispersers, whereas some other ant species were clearly interested in cleaned seeds, being considered as predators. Ants were the most important group in secondary removal of seeds. However, we also recorded footprints in sand stations indicating that vertebrates such as lizards, birds and small mammals could also be involved in removal of seeds.

The authors thank CAPES, CNPq and FAPEMIG for the financial support and scholarships. FAOS holds a CNPq productivity fellowship.