

Vertical Distribution of Dung Beetles in a Cerradão Fragment in Brazil

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Dung beetles are very important organisms due to the process of burying dung pads from various animal groups into the ground, contributing in excrement cleaning and cycling of nutrients. Most species fly at low altitudes, but some species may fly at high altitudes especially in tropical forests. Flying at higher altitudes might help these them to explore new sources of food, in a strategy for resource partitioning among species. The objective was to study the vertical stratification of dung beetles in a cerradão fragment (cerrado physiognomy). The study was conducted in a well preserved 60-ha cerradão fragment (20°20'09.56"S 51°24'38.59"W), that belongs to UNESP Farm, and located in Selvíria, state of Mato Grosso do Sul, Brazil. We used flight intercept/landing traps baited with 60 ml of fresh pig dung, placed at ground level, 2-, 4-, 6- and 8 m above ground. Trapping frequency was weekly, from October 2010 until September 2011. The most abundant species, *Canthidium septemmaculatus histrio*, *Dichotomius bos*, *D. carbonarius*, *D. glaucus*, *D. nisus*, *D. semiaeneus*, *Eurysternus nigrovirens*, *Genieridium bidens*, *Ontherus appendiculatus*, *O. sulcator*, *Onthophagus* nr. *hirculus*, *Phanaeus palaeno*, *Trichillum externepunctatum* and *Uroxys epipleuralis*, were statistically analyzed. Traps above ground level trapped several species in Diptera and Coleoptera (mainly Histeridae, Bostrichidae and Curculionidae Scolytinae). However, representatives of dung beetle species were trapped only in traps at ground level, differing statistically from the remaining traps ($\alpha < 0.01$). These results indicate that there are no species that do perching, which usually use a vertical stratification to avoid food competition, or they were not present in low numbers. Most trapped species were paracoprid beetles and larger than 10 mm; these species usually fly at low altitudes, close to the ground. We might assume there is an intense competition for food at ground level.

Keywords: flight intercept trap; paracoprid beetles; food competition.