
Earthworm richness in no-till sites in Paraguay

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This study aimed to assess the earthworm species richness in sites under no-tillage (NT), and fragments of native forest (NF) and reforestation (RF) used as a reference, in Paraguay. We sampled 30 sites (26 NT, 3 NF and 1 RF). Earthworm sampling was qualitative and consisted of digging 5 randomly selected holes at each site. The earthworms were fixed in alcohol (92.8%) and later identified to family, genus and species level. A total of 136 individuals were identified, belonging to the families: Rhinodrilidae (*Urobenus brasiliensis*), Glossoscolecidae (*Glossoscolex* sp.1, *Glossoscolex* sp.2, *Glossoscolex* sp.3, *Glossoscolex* sp.4, *Glossoscolex* sp.5, *Fimoscolex* sp.1 and juveniles), Ocnerodrilidae (Ocnerodrilidae sp.1, Ocnerodrilidae sp.2), Acanthodrilidae (*Dichogaster gracilis*, *D. bolaii* and juveniles) and Megascolecidae (*Metaphire californica* and juveniles) and unidentified juveniles. The FN and RF sites had 100% of native species. From the 26 NT sites sampled, 10 had no worms and two had only unidentified juveniles. In the remaining 14 sites, 67% of the overall earthworm species were native. Considering each site: seven had 100% native species, three had 50% native species and four 100% exotic species. Until this work, Paraguay reported 37 species (28 native and 9 exotic) of earthworms, two of these (*U. brasiliensis* and *D. bolaii*) were encountered during our sampling, and the others are all new records. Almost all the encountered species of the native genera *Glossoscolex* and *Fimoscolex* are new species and need to be described and named (\cong 6 species).