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Soil macrofauna denisty in different land-use systems in Santa Catarina state, Brazil*

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Soil macrofauna communities are strongly affected by soil and land-use management, with biodiversity patterns at local and regional level being dependent on management activities In Santa Catarina (SC), Brazil, little information is available on soil macrofauna, so during the SisBIOTA project (2011-2013), five land-use systems (LUS) were sampled (native forest - NF, *Eucalyptus* plantation - EP, pasture - PA, no-tillage cropping - NT and integrated crop-livestock - ICL) in 12 counties in 4 regions of the state (West, Plateau, East and South), totalling 60 sites (12 for each LUS). At each site, nine 25 x 25 x 20 cm monoliths (TSBF method) were collected in the winter and summer seasons using a 3x3 grid scheme. The soil macrofauna was fixed in alcohol 92.8%, counted and sorted at group level. Annual group richness ranged from 9 to 17 in all regions and LUS. Highest group richness was found in NF in the West (15), East (17) and South (16) regions and NT (15) in the Plateau. Macrofauna annual mean density was usually higher in all regions in the less impacted LUS (Region = NF, RE and PA – West = 612, 816 and 226 ind m^{-2} – Plateau = 913, 476, 1500 ind m^{-2} – East = 847, 984 and 1156 ind m^{-2} – South = 277, 1296 and 2368 ind m^{-2}), but in the West and South regions NT also had high soil macrofauna abundance (642 and 648 ind m^{-2}). Soil ecosystem engineers (Oligochaeta, Formicidae and Coleoptera) predominated in abundance in all regions. Isoptera were frequent in the West and Plateau regions. These groups accounted more than 88% in the West, 90% in the East, 92% in the Plateau and 95% in the South region of all the soil macrofauna density and varied considerably among the regions and among the LUS.

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