[P2.212]

Earthworm abundance in land-use systems in Santa Catarina state, Brazil*

M.L.C. Bartz*[1], G.G. Brown[2], S.W. James[3], T. Decaëns[4], M.G. da Roda[5], S.T. de Souza[5], D. Baretta[5]

[1]Universidade Positivo, Brazil, [2]Embrapa Forestry, Brazil, [3]University of Iowa, USA, [4]Université de Rouen, France, [5]Universidade do Estado de Santa Catarina, Brazil

Little is known of the earthworm communities (abundance and diversity) of the state of Santa Catarina (SC), Southern Brazil. Therefore, the present study evaluated earthworm species richness and abundance in various land-use systems (LUS) in four regions (West, Plateau, East, South) of Santa Catarina. Five LUS were sampled in three counties per region: native forest (NF), *Eucalyptus* plantation (EP), pasture (PA), integrated crop-livestock (ICL) and no-tillage cropping (NT). Nine TSBF sized holes (25x25cm, 20cm deep) were taken in each LUS in summer and winter seasons, totaling 1080 samples. The earthworms were fixed in alcohol 92.8%, counted and identified to family, genus and species level. Considering the LUS independently of region, higher annual mean abundance was found in RE and PA (125 and 89 ind m^{-2}), while the other LUS had much lower abundance (ICL=69 ind m^{-2}, NF=65 ind m^{-2} and NT=49 ind m^{-2}). Exotic earthworm species dominated in all LUS (EP>NF>NT>ICL>PA = 95>88>69>66>61% exotics). Considering each region separately this scenario changes. PA (West) and ICL (Plateau) had higher abundance (118 and 60 ind m^{-2}, respectively), while the other LUS ranged from 5-30 ind m^{-2}, with smallest abundance in RE in both regions. Several LUS in the West (NF, PA and NT) and Plateau (NF, EP and PA) regions had 100% native species. The East region had higher abundances in EP, NF, PA and NT (300, 228, 191 and 113 ind m^{-2}) and all these LUS had >90% exotics (RE=100%). EP in the South had the highest abundance (185 ind m^{-2}), followed by PA (88 ind m^{-2}). The other LUS had <50 ind m^{-2}, with NF only 11 ind m^{-2}. Exotics dominated in the South in NF and EP (89 and 92%), while ICL and NT had more native spp (60 and 66%).

Keywords: Oligocheata, soil management, anthropic impact, agroecosystems