

Poster – Session 6

Changes in soil quality after passage through the gut of *Pontoscolex corethrurus* (Oligochaeta: Annelida)

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Earthworms and a few other groups of large invertebrates have the ability to ingest soil altering its physical and chemical characteristics. To evaluate the effect of earthworms on soil properties in a regenerating mine-site, three soil types (Neossolo Litólico - RL, Cambissolo Háptico – CX and Neossolo Quartzarênico - RQ), differing in clay and organic matter contents were collected from a lead-mining area in Adrianópolis-PR, Brazil, at two depths: 0-10 and 20-40 cm. Earthworms (*Pontoscolex corethrurus*) were collected from the Federal University of Paraná Farm and five adults were incubated per container (n=3 replicates) in the three soils (300 cm³), maintained at 70% field capacity and at room temperature. Castings and control soil were collected every two days using tweezers and the analyses were performed on uningested soil (control) and the casts. Parameters analyzed were: pH-H₂O, exch. acidity, CEC, exch. Ca, Mg and Al, available K and P, total organic carbon (TOC) and nitrogen (TN), soil texture and water dispersible clay. The results were submitted to ANOVA using SAS and the means were compared by Tukey test (p <0.05). The worms selected soil fractions to ingest, increasing fine sand and silt, reducing total sand contents. They also altered soil fertility, increasing levels of available P and K, CEC and Ca+Mg. Few effects on TN were observed, TOC increased only in the castings from the poorer soil (selection of C-rich particles) and pH was generally higher in the casts. The only side effect observed due to gut passage, was the increase of clay dispersed in water, which can increase soil erodibility.