



Earthworms in organic and conventional coffee cultivations in Lerrovile – PR, Brazil

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Earthworm species diversity varies with climate, soil, and vegetation conditions, but more significantly so with anthropic action. These organisms are, therefore, sensitive to the environmental conditions, and studies are needed in order to identify species, by evaluating different environments under different disturbance and regeneration processes. The objective of this study was to identify earthworm species in organic and conventional coffee cultivations. The study was conducted in the city of Lerrovile – PR, Brazil, in five coffee cultivation areas: 1) organic coffee (4 years), without soil cover (CO1); 2) organic coffee (7 years), where *Leucena* sp trees and grass were planted between coffee rows (CO2); 3) organic coffee planted in dense stands (7 years), with permanent soil cover (CO3); 4) conventional coffee intercropped with corn, without soil cover (CC1); 5) conventional coffee intercropped with corn, without soil cover (CC2); 6) native forest (NF). The CO1, CC1, and NF treatments were in areas where the soil was classified as Nitosol, while CO2, CO3, and CC2 were in Latosol areas. Eight samplings were performed in each area during the dry period (winter), using the TSBF (Tropical Soil Biology and Fertility) methodology, which consists in removing 25 × 25 cm monoliths from the 0-20 cm layer. The earthworms were screened manually and preserved in 4% formaldehyde, and were then separated into adults and juveniles and identified at the genus and species levels. No earthworms were found in the CC2 area. The following earthworms were identified: NF - *Glossoscolex* sp., *Dichogaster saliens*, and enchytraeids of the genus *Fridericia*; CO1 – *D. saliens*, *D. affinis* and enchytraeids of the genus *Fridericia*; CO2 – *Amyntas gracilis*, *Pontoscolex corethrurus*, and enchytraeids of the genus *Fridericia*; CO3 – *Pontoscolex corethrurus*; CC1 – enchytraeids of the genus *Fridericia*. It is important to point out that a major part of the earthworms were juveniles and that individuals in areas CO1, CC1 and part of CO2 were in aestivation. It could be observed that organic cultivation provided greater earthworm diversity when compared with conventional cultivation. Nevertheless, the forest had the highest diversity and contained native species, while the species in the cropping areas were exotic and peregrine. Evaluations in the rainy period are required for a better understanding of these results.

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