

[P2.126]

**Soil macroinvertebrate communities as indicators of ecosystem services. A meta analysis of the MACROFAUNA data base.**

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Soil macrofauna, the invertebrates that are visible to the naked eye, comprise 16 main orders that may locally comprise as many as 50-80 families, and 150-300 species, according to soil, climate and vegetation conditions as well as land management options. The MACROFAUNA database was built to accommodate data on communities of natural and disturbed ecosystems worldwide. In over 1500 sites distributed over 40 countries, ca. 15000 samples were taken in a great number of regional and international research projects using the standard Tropical Soil Biology and Fertility (TSBF) protocol now registered as ISO 23611-5.

A meta analysis showed considerable differences in soil macrofauna community structures from temperate and tropical climates and soil ecosystem processes regulated by these organisms.

Latitude: Earthworms and gastropods are dominant in temperate areas, while termites, ants and myriapods dominate in tropical areas. On the other hand, earthworms dominate the biomass in all land use systems in both temperate and tropical regions.

Soil texture: A co-inertia analysis showed a significant association of earthworms, isopods and ants with clayey soils with high organic matter content while termites were associated with sandy soils.

Land management: Macrofauna communities are highly sensitive to any option of soil management, degradation and contamination, which makes them excellent indicators of changes in soil function or conditions.

Synthetic Indicators of soil quality based on soil macroinvertebrate data are now widely used as proxies of soil biodiversity and health. In addition, indicator species have proved to be reliable indicators of levels of ecosystem service provision. Their mutual recognition by scientists and farmers and technicians might be a simple way to allow farmers to measure ecosystem services and access to the market of Ecosystem services and/or any public policy aimed at stimulating the conservation and proper management of soil natural capital.

Keywords: Macroinvertebrates, Communities, Ecosystem services, Meta analysis