

BETSI

BIOLOGICAL AND ECOLOGICAL FUNCTIONAL TRAITS* OF SOIL INVERTEBRATES. SOIL ORGANISMS' RESPONSE TO ENVIRONMENTAL FACTORS AND DEVELOPMENT OF BIO-INDICATORS.

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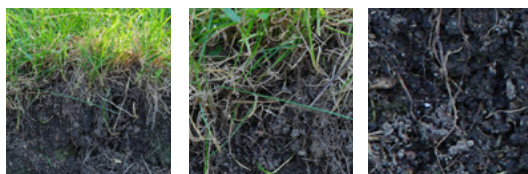
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Soil fauna is remarkably diverse as we estimate that it can represent up to 80% of the animal biodiversity. All these organisms interact strongly with their environment and perform indispensable functions, playing a major role in the functioning of the soil-plant system.

Sometimes organisms operate like "ecosystem engineers," and their impact on soils is as much physical as chemical and biological. They modify the soil structure and control the bioavailability of water and of chemical elements that are useful or toxic to plants. They establish mutualistic relations with microflora and are also, like the community of earthworms, indicators of soil quality.

The increasing pressures from human activities on soil and climatic changes threaten soil biodiversity. For example, we observe a 20 to 90% decrease of the earthworms biomass over three years when a grassland field is converted to a crop.

The BETSI project will synthesize and organize data on the functional traits* of soil invertebrates. This project will develop an exceptional database of unprecedented scope on this understudied facet of biodiversity. The work of a cross-disciplinary consortium will allow for a broad study of these organisms.



CESAB'S
ADVANCES

■ With the support of the CESAB, the various databases used in this project will be standardized, synthesized, and interpreted to be made available to the public. For those working on soil biodiversity issues, sharing such data constitutes a real opportunity to respond efficiently to the major scientific and society challenges associated with this topic.

STEPS

- Organize a database on the functional traits of many animal species living in the soil.
- Understand how soil organisms will respond to environmental factors such as pollution and soil use.
- Develop a bio-indicator tool useful to different actors who intend to monitor soil organisms.

Focus

*Biological and ecological traits

Biological and ecological traits are the qualitative and quantitative features of organisms enabling them to cope with the environment. This information is very useful to diagnose how

pollution impacts individuals, populations, and communities. Using traits as indicators of soil ecological quality is a very new and promising approach.