

WHAT IS

soil biodiversity

DID YOU KNOW THAT SOIL IS A LIVING RESOURCE, HOME TO MORE THAN 25% OF OUR PLANET'S BIODIVERSITY AND THAT THERE ARE OVER 40 000 DIFFERENT ORGANISMS IN ONLY 1 G OF SOIL?

Plants nurture a whole world of creatures in the soil, which in return feed and protect the plants. This diverse community of living organisms keeps the soil healthy and fertile. This vast world constitutes soil biodiversity and determines the main biogeochemical processes that make LIFE POSSIBLE ON EARTH.

Soil biodiversity is the variation in soil life, ranging from microorganisms to macrofauna, and everything in between.

Global Soil Biodiversity Atlas, European Commission.

LET'S TAKE A LOOK AT THE MANY ROLES OF SOIL BIODIVERSITY



Decomposition of organic matter



Building and maintenance of soil structure



Climate change mitigation, carbon sequestration and gas exchanges



Nutrient cycling and increase in crop productivity



Pest, parasites and disease control



Soil detoxification, air and water purification

Soil biodiversity can be easily studied with simple equipment

While bacteria, fungi, microfauna (< 0.1 mm, e.g. nematodes) and mesofauna (0.1 to 2 mm, e.g. mites) require special techniques to be isolated and extracted from soil, macrofauna (> 2 mm, e.g. earthworms) can be extracted from soil samples

Here is a simple method to show visible soil organisms and compare the effect of diverse soil conditions (e.g. forest versus prairie, clay soil versus sandy soil)

LET'S TAKE A LOOK AT THE BIODIVERSITY IN YOUR SOIL

- 1** a. delineate a square on the soil surface (e.g. 25x25 cm)
b. dig around this area to a given depth (e.g. 10 cm) in order to have an isolated block of soil
c. carefully lift this block of soil (25 x 25 x 10 cm) and place it on a tray

4

If needed, the procedure can be repeated for deeper layers (e.g. 10 to 20 cm) and the results compared. The diversity of soil organisms can be evaluated

2

Put on gloves, take out all the small animals that you can see moving and place them in a vial



3

When you are sure that all animals have been removed, they can be counted and viewed under a simple microscope or magnifying glass



Experiment from the Global Soil Biodiversity Atlas of the European Commission

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