



## *Soil Is Alive! Soil – It's Amazing!*

### **Soil Is Alive!**

According to the United Nations Convention on Biological Diversity (CBD), biodiversity is defined as the variation of life from genes to species, communities, ecosystems and landscapes.

- While there is no formal unit of biodiversity, the expression is used to represent the totality of life through taxonomic, ecological, morphological and molecular diversity.
- Soil biodiversity reflects the mix of living organisms in the soil. These organisms interact with one another and with plants and small animals, thus forming a web of biological activity.
- Soil biodiversity varies greatly across the globe as the species numbers, composition and diversity of a given soil depend on factors such as air, temperature, acidity, moisture, nutrient content and organic matter.
- Soils are conditioned by climate, altitude, soil parent material, land use and the presence of living organisms (especially humans).
- Soils provide an amazing habitat and may contain more than 10 000 species per square metre.
- A single gramme of soil may contain millions of individual cells and thousands of species of bacteria. Bacterial biomass can amount to 1 – 2 tonnes per hectare in temperate grasslands.
- Soil organisms maintain critical processes, such as carbon storage, nutrient cycling and plant species diversity, and play a key role in maintaining soil fertility.
- Earthworms, termites and other soil organisms enhance soil productivity by mixing the upper soil layers, which redistributes nutrients, aerates the soil and increases surface water infiltration. Earthworms increase crop yields by 25 %, on average.

### **Soil – It's Amazing!**

- Soil makes up the outermost layer of our planet, while topsoil is the most productive and biologically active soil layer.
- A typical mineral soil sample is 45 % minerals, 25 % water, 25 % air and 5 % organic matter.
- Soil has varying amounts of organic matter (living and dead organisms). It is estimated that 5 – 10 tonnes of animal life can be found in one hectare of temperate grassland soil.
- Ten tonnes of topsoil spread over one hectare is only a few mm thick, but it can take more than 500 years to form 2 cm of topsoil.
- Soils are generally around 1 – 2 m deep. However, some soils are very shallow (just a few centimetres) while soils found on old, stable land surfaces are much, much deeper. The Phillipi Peatland in Greece is reputed to be 190 m deep.
- New soil material is continuously deposited by rivers, volcanoes and wind on the Earth's surface. While soils in glaciated regions are relatively young, older, more weathered soils can be found closer to the tropics. The three thousand million year old Nsuze Paleosol, an ancient soil sandwiched between volcanic and sedimentary rocks in South Africa, is the world's oldest soil deposit.

***Soil Lovers say: Knowing How To Build And Maintain A Healthy Soil Is Essential For All Life.***