



Earthworms - the farmer's partner in conservation agriculture

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Photo: <https://upload.wikimedia.org/wikipedia/commons/6/60/Earthworm.jpg>

Earthworms are mostly overlooked and greatly underestimated, and yet they play a very important role in the soil. These worms are referred to as the engineers of the soil, and with good reason. They improve soil structure through their burrowing activity in their search for food. During this process they loosen soil particles and form tunnels through the top layers of the soil. These tunnels assist with the aeration and water drainage within the soil. When the earthworms make these burrows they pull organic material down into the soil, which in turn improves soil quality. The organic material which they feed on is in turn released as plant available nutrients. Earthworm

casts produce an ideal crumb-like texture to the soil and studies have found that these casts contain more nitrogen, potassium, phosphorous, magnesium and calcium than the surrounding soil.

Furthermore, nematode numbers as well as pathogenic fungi in soil are controlled in the presence of earthworms when they are ingested together with organic material and soil.

Microbial activity is stimulated in the presence of earthworms. The significance in this is that a good soil microbiology is very important as soil microorganisms and enzymes regulate nutrient cycling. Microorganisms are involved with the decomposition and mineralisa-

tion of complex organic materials.

Earthworms are also used for scientific evaluations of farming or degraded soil as they are excellent indicators of pollution and soil changes. These tests observe the interactions that exist between environmental chemicals and biota and focuses on different biological organisation levels, which is used as a parameter for toxicity. As these worms are constantly in contact with each other, the soil, plants and microorganisms, they are ideal for these tests. As soon as any disturbances take place in the soil, the effects thereof will be observed in the earthworm community in terms of survival, biomass and reproduction.

A favourable habitat is created for

