

*EDITORIAL*

## The Role of Microorganisms in Soil

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### Editorial

Soil microbiology, the name itself defines the study of microorganisms in the soil. Healthy soils are chock-full of living organisms, Soils are excellent culture media for the growth of many kinds of microorganisms a single teaspoon of soil contains over 1,000,000,000 microorganisms Some organisms are visible to the naked eye, like mites, springtails, earthworms, and beetles. The majority of soil-dwellers are very small. And also important to soil fertility.

They are different kinds of microorganism in the soil such as bacteria, fungi, algae, protozoa, nematodes, earthworms, insects and other small to medium-size soil animals. Usually, microorganisms located in the soil are at the top 2-3 cm, most organisms are commonly found close to root surfaces, in dead roots, on soil particles. Clayey soils have many bacteria because these soils have a lot of small pores. Sandy soil is a less suitable habitat. Soils with less growth of microorganisms are Infertile Soil. The Bacterial population in the soil exceeds because it has just one cell than any other group of microorganisms in number and variety. Advanced bacteria form branches like fungi. Fungi are abundant they produce long, slender strings of cells called filaments, or hyphae. Actinomycetes are in-between these two organisms. actinomycetes give the soil a characteristic earthy smell. Actinomycetes and fungi are good at the decomposition of organic residues. The job is completed by bacteria by eating the more digestible ingredients.

In soil, the microbes which are found in smaller numbers are protozoa (one-celled organisms that decompose organic materials and also consume bacteria), algae, and cyanobacteria (often called blue-green algae). Nematodes are microscopic roundworms; some are beneficial and some are plant parasites. Factors that affect different kinds of microorganism growth in the soil are Chemical conditions such as acidity and alkalinity will greatly affect soil organisms, for example, fungi often prefer acidic soils, while actinomycetes thrive in more alkaline conditions populations, Moisture, temperature, soil fertility, and pH, Aeration (oxygen), and Organic matter.

In order to encourage microbial activity in the soil favorable environment should be created for both microbes and crops. This can be finished by time and appropriate tillage that avoids drainage practices, irrigation, and compaction that keep the soil moist but not waterlogged, to maintain a near-neutral pH, and frequent addition of organic (carbon-containing) residues to provide energy for the microbes. Organic matter in the soil is formed by living organisms. Such as Dead forms of organic material like mostly dead plant parts, living parts of plants like mostly roots. Living microbes and soil animals.

In general, the plenty of microbes in soil is proportional to the organic matter content. The larger microbial populations are supported by Soil by regularly adding large amounts of organic residues. There is usually an explosion in microbial numbers however after the addition of carbon 'fuel'. Fuel is incorporated into microbial cells and given off as carbon dioxide. Further, microbial cells are food for other microorganisms and then they, are decomposed through microbial activities. So eventually, microbial activity returns to a low level unless more residues are added. When environmental conditions are suitable microbes are always, ready to leap into service and there's a source of energy.

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