Beneficial effects of soil microorganism

The application of soil microorganisms is very extensive. We can repair contaminated soils, produce fungicide, biopesticides, and so on.

Soil microbes are all tiny creatures that are invisible or invisible to the naked eye. They are small and simple in structure. They usually use optical microscopes and electronics. However, we can't ignore the importance of microorganisms in the soil.

soil microorganisms

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Distribution of Microorganisms in Soil

The microscope can be seen about 1000 times, but some microorganisms can be seen by the naked eye, like mushrooms, ganoderma lucidum, and other fungi. Organisms are varied, and they exist in their unique ways for their survival and reproduction.

Type of Soil Microorganisms

There are many kinds of microorganisms in the soil, including bacteria, fungi, actinomycetes, algae, and protozoa. The number is also huge. There are hundreds to hundreds of billions of grounds in one gram of soil.

Most of the soil microorganisms are beneficial to the growth of crops. They have a significant impact on the formation and development of the soil, the material cycle, and the evolution of fertility. Of course, some pathogenic microorganisms are not favored.

Application of Beneficial Soil Microorganisms

1. Form Good Soil Structures

Soil is not merely a simple combination of soil particles and fertilizers. As an active component of soil, soil microorganisms in their own lives, through the exchange of metabolically active oxygen and carbon dioxide, and secreted organic acids, etc. contribute to the soil particles.

The formation of a large aggregate structure eventually results in soil. The floristic composition, biomass, and life activities of soil microbes are closely related to the creation and development of soil.

2. Decompose Organic Matters

The most significant effect of soil microorganisms is the decomposition of organic matter, such as the roots and leaves of crops and organic fertilizers applied to the soil.

Only through the action of soil microorganisms, can it rot and decompose, release nutrients for crop utilization, and form humus, Improve soil structure and ploughability.

Then, soil microorganisms can also decompose minerals, and metabolites of soil microorganisms can promote the dissolution of insoluble substances in the soil. For example, phosphorus bacteria can decompose phosphorus in phosphate rock. Potassium bacteria can decompose potassium in potassium ore to facilitate absorption and utilization of crops and increase soil fertility.

Besides, the decomposition and utilization of urea can not be separated from the soil microorganisms. These soil microorganisms are like the fertilizer processing plants in the soil, and they process the mineral fertilizer in the soil into a form that the crop can absorb.

3. Control Soilborne Diseases

The presence of beneficial microorganisms in agricultural soils can often help farmers reduce their demand for pesticides and fungicides. When you use beneficial microbial strains to replace pesticides to

control soil diseases. Such as Trichoderma harzianum, it will not cause harm to crops, surrounding ecosystems, or human health.

As the use of chemical pesticides is reduced, the control of biological diseases effectively reduces the pressure on the soil environment and helps build a healthier ecosystem. Also, beneficial soil microorganisms can also improve soil health and promote soil fertility, thereby increasing crop yields. The quality of the crop is improved, maintaining a higher nutrient and moisture content.

4. Fit Nitrogen

Nitrogen accounts for 4/5 of the air composition, but plants cannot use it directly. Some microorganisms can use their nitrogen fixation to convert nitrogen in the air into fixed nitrogen compounds that plants can use. With such soil microorganisms, it is equivalent to the soil. With its nitrogen fertilizer production plant.

Soil microbes living around the roots of plants can also regulate plant growth. Symbiotic microbes such as rhizobia, mycorrhizae, and fungi can directly supply nitrogen, phosphorus, and other mineral elements to the plants, as well as organic acids, amino acids, and vitamins. , Auxin and other natural nutrients promote plant growth. Soil microorganisms are closely related to plant root nutrition.

5. Use in Soil Degradation

Soil microorganisms can also degrade organic pesticides, municipal waste, and factory waste that remain in the soil. Microorganisms break them down into harmless or even harmless substances, reducing the risk of residual poisons.