Special Issue

Harnessing of Soil Microbiome for Sustainable Agriculture

Message from the Guest Editors

Soil microorganisms such as bacteria, fungi, protozoa and archaea, collectively known as the soil microbiome, play a vital role in plant health and crop productivity. By incorporating microbial inoculants, biofertilizers and biopesticides into agricultural practices, farmers can enhance soil health, promote resilience to climate change and reduce environmental impacts. The use of diverse microbial communities over single strains can lead to more effective and resilient agricultural systems. Microbial bioremediation techniques can clean up contaminated soils by using microorganisms to break down pollutants. Advances in soil microbiome research and biotechnology are crucial for promoting sustainable agriculture. Technologies such as metagenomics and microbial ecology provide insights into soil microbial communities in agroecosystems. This Special Issue emphasizes the potential of the soil microbiome to improve agricultural sustainability, increase crop yields and reduce environmental damage, thereby supporting food security and ecosystem stability for future generations.

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