Special Issue

The Forest Microbiome and Climate Change

Message from the Guest Editors

Forests are diverse ecosystems that offer a wide range of services. In addition to the well-known roles of providing wood, energy, food, and recreational spaces, they are also crucial in terms of soil-related services. These include storing carbon, regulating gas emissions. and keeping biogeochemical cycles in check. However, these soil-related functions are sometimes overlooked or underestimated. Forests play a central role in mitigating climate change; however, these complex ecosystems face challenges such as rising carbon dioxide levels, increasing temperatures, prolonged droughts, wildfires, disease outbreaks and persistent nitrogen deposition. The future of forests depends primarily on the performance and balance of various microbial communities. These include mostly symbiotic bacterial and fungal communities, as well as plant pathogenic microorganisms. A better understanding of the interactions between plants and microorganisms is crucial for predicting forest dynamics and formulating effective management strategies that strengthen ecosystem stability and mitigate the negative impacts of climate change.

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