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Soil microbial diversity in relation to climate change

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Abstract

Climate change and global warming can have significant impacts on all the soil biodiversity and biological activity and soil ecological function. These impacts can be directly or indirectly linked to the alteration of the most important climatic parameters (e.g. temperature, humidity). Soil biodiversity is more extensive than any other environment on the globe when all living forms are considered. The soil biota contains representations of all groups of microorganism like fungi, bacteria, algae and viruses, as well as the microfauna such as protozoa and nematodes. Today, disturbance regimes are changing drastically under the combined effects of climate change, biological invasions and direct human modifications of the environment. However, it remains very difficult to assess and predict how soil communities will respond to these disturbances. Environmental variability is an integral part of the dynamics of ecosystems, and some disturbances are unavoidable. Climate change may intensify these seasonal disturbances, stretching the limits more towards those of extreme events. Climate change is likely to have significant impacts on soils that may affect all of the services provided by soil biodiversity; indeed the quantification of these impacts is needed. In any case, all mitigation and attenuation measures taken to limit global climate change are expected to have a beneficial impact on soil biodiversity preservation, soil functioning and associated services.

Biography

Asit Mandal has completed his Ph.D at the age of 29 years from Indian Agricultural Research Institute, New Delhi. Presently, he is the working as scientist, IISS, Bhopal, Madhya Pradesh, a premier institute of Natural Resource Management of ICAR. He has developed expertise in the field of soil biodiversity and bioremediation. He has also more than 7 research papers in the international journals and received two awards and gold medal from the soil science society. He has memberships in many scientific societies like Indian Society of Soil Science, Soil Conservation Society of India and Indian Science Congress Association.