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### Pattern of distribution of bacterial host and its phages in soil environment

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Microbial inoculation technologies are being used for enrichment and mobilization of nutrients, remediation of contaminants and increasing the plant growth in stressed and degraded habitats. Such technologies have not given the desired results in many environments as the ecological performance of microbial communities is the net result of a complex interaction among different community members. Phage-bacterium interaction is one of the important biological interactions, which not only shape the microbial community, affect the fitness of microbial population but also affect population density and community functions. The lytic phages kill their host and affect the density, whereas, the temperate phages live inside the bacterial host for a long time before the onset of lysis and therefore, affect the function of host bacteria. However, little is known about the pattern of distribution of bacteria and their associated phages in the environment. Such interactions in a heterogeneous environment, like soil characterized by patchy distribution of nutrients, organic matter, minerals, pH, soil type, and texture are likely to significantly affect the pattern of phage-bacterium distribution. A better understanding of such heterogeneity and its impact on phage-bacterial distribution would provide baseline data to understand structure and function of microbial communities in soil environment. Therefore, in the present study spatial pattern of distribution of phages and bacteria at microscale were examined and factors responsible for such pattern are also analyzed. A detailed analysis of such pattern in different soil types and ecosystems will help in improvement in the efficacy of microbial technologies for diverse soil environment.

#### Biography

Swagata Karmakar is currently pursuing her PhD in Environmental Studies from University of Delhi and completed Master's degree in Environment Management. She has published two papers in reputed journals and presented her work at many national and international conferences.

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