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EMERGING RISKS OF MICROPLASTICS TO SOIL MICROBIAL FUNCTIONS IN RURAL AGRICULTURAL LANDSCAPES

SOUMI ADAK[1], SOMRHITA PAL[1], NIRLIPTA SAHA[1]
AND PRIYANKA SEN GUHA[1]*

Plastic particles less than 5 mm have become a prominent pollutant of the environment, especially in terrestrial ecologies, making microplastics a significant pollutant. Their deposition in soils leads to changes in the physical, chemical and biological makeup of the environment creating a great risk to the microbial populations of soils. This review is on the impact of microplastics on the soil microbes that are crucial in nutrient cycling, decomposing organic matter, and soil fertility. Microplastics affects the microbial diversity, abundance, decrease enzymatic activities, and alter their metabolic pathways. The microplastic particles also impair soil structure and aeration which in turn establishes poor environment on which microbes can thrive. The study of such interactions is important in determining the long-term effects on soil health and sustainability of the ecosystem. The critical importance of the development measures that could reduce the impact of microplastic pollution by preserving functionality of the microbial communities.