

3rd International Conference on

Applied Microbiology and Beneficial Microbes

June 06-07, 2018 Osaka, Japan

Bacterial feeding nematodes use for nitrogen mineralization, organic farming, plant production and bio suppressing agent of plant parasitic nematodes

Tabassum Ara Khanum and Shahina Fayyaz
University of Karachi, Pakistan

Free living soil nematodes have been recognized as one of the part of agricultural fauna as they play a significant role in ecosystem. These nematodes are useful indicators of soil quality because of their tremendous diversity and their participation in many functions at different levels of the soil food web. The soil needs management practices and fertilization. Classical management practices along with bio-fertilizers are useful to increase soil conditions and crop productivity. Soil nematodes, especially bacterial and fungal-feeding nematodes, can contribute to maintain adequate levels of plant-available N in farming systems relying on organic sources of fertility. The process of converting nutrients from organic to inorganic form is termed as mineralization; mineralization is a critical soil process because plants take up nutrients from the soil primarily in inorganic forms. Nematodes contribute directly to nutrient mineralization through their feeding interactions. For example, bacterial-feeding nematodes consume N in the form of proteins and other N-containing compounds in bacterial tissues and release excess N in the form of ammonium, which is readily available for plant use. Indirectly, nematodes enhance decomposition and nutrient cycling by grazing and rejuvenating old, inactive bacterial and fungal colonies by spreading bacteria and fungi to newly available organic residues. In the absence of grazers, such as nematodes and protozoa, nutrients can remain immobilized and unavailable for plant uptake in bacterial and fungal biomass. The laboratory cultured nematodes were inoculated into soil containing pre-germinated plants and C:N ratio in soil was observed. The present study provides the direct role of microbial feeding nematodes in enhancing soil nitrogen.

tabassumak@uok.edu.pk