

# 6<sup>th</sup> International Conference on Microbiome, Probiotics and Gut Nutrition

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## **Bacterial Feeding Nematode Use for Nitrogen Mineralization.**

### **Abstract:**

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 maintaining 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 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, and 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.

### **BIOGRAPHY:**

Dr. Tabassum Ara Khanum did Ph.D. in 2010 from University of Karachi. She had 21 years research experience in plant, soil and entomopathogenic nematodes taxonomy, identification, control of insect and nematodes by using entomopathogenic nematodes as bio-pesticides and bio-fertilizer. Published one book, 4 chapters, 59 research papers (20 International and 39 national) and Eleven National patents. Granted the "Productivity allowance" by Pakistan Council of Science and Technology for the year 2012 and 2015. Described 25 new 38 known species, with the application of entomopathogenic nematodes and other bacterial feeding nematodes on different insect pests as biopesticide and use as a biofertilizer for plant and soil health, respectively. Awarded a shield on the occasion of 3rd International Conference of Pakistan phytopathological society January, 23-25, 2014. Awarded a shield on the occasion of first National Symposium on Plant Responses to Environmental Stresses" Recent Advances in Agriculture and Farming, November 15, 2014.

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