

2nd International Conference on **Agricultural & Horticultural Sciences**

Radisson Blu Plaza Hotel, Hyderabad, India February 03-05, 2014

Analysis of bacterial community structure and diversity in organic and inorganic soil by DGGE

Malik Ahmed Pasha¹, P. U. Krishnaraj¹, H. B. Bablad¹ and D. L. N. Rao²

¹University of Agricultural Sciences, India

²Indian Institute of Soil Science, India

The structure and role of microbes in soil is a function of soil type, vegetation and the inputs applied to the soil. Five year old experiment of organic and inorganic farming was selected and its bacterial structure was studied at before sowing, seedling, vegetative, flowering and maturity stages of soybean by denaturing gradient gel electrophoresis (DGGE). 16S rDNA was amplified with PRBA338GC and PRUN518 primer and the amplicons were separated in 12% polyacrylamide gel containing 20% to 80% chemical denaturant. The gel image was processed by Syngene gene tool software. Range weighted richness method was followed to study species richness and Shannon index for their diversity. Distribution of species in the sample was analysed by Pareto-Lorenz evenness curve and the shift in community structure during growth stages of soybean was studied by moving window analysis. Both the soils at all the stages showed broad carrying capacity and diversity of bacteria, but it is significantly more in organically managed soil. The Pareto-Lorenz evenness curve indicates the functionality of both the soils is highly specialized. Around 65-70 per cent species remain common at all the growth stages indicating majority of the bacteria are influenced by soil type and inputs applied and are moderately affected by root exudates produced by plants. Though, both the soils are similar in structure but organic soil harbour more and diverse bacterial species and hence it is expected that over a period of time more uniform and balanced community with moderate function will be evolved in organically managed soil.

Biography

Malik Ahmed Pasha is pursuing Ph.D. in Molecular Biology and Biotechnology from University of Agricultural Sciences Dharwad. He is working on metagenomic analysis of soils with organic and inorganic farm management. Couple of papers based on the outcome of his research is under process.

malikiabt@gmail.com