

Influence of Integrated Nutrient Management on Microbial Biomass and Enzymes under Long term Rice-rice Cropping System in Alfisols

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ABSTRACT

Soil microbial biomass dynamics and the activity of soil enzymes were studied in different integrated nutrient management treatments in rice-rice cropping system in Alfisols of southern Telangana zone of Andhra Pradesh during 2005-06 and 06-07. The substitution of 25 or 50% N fertilizer with *Glyricidia* significantly enhanced the CO₂ evolution indicating, higher respiration rate than the fertilized soil in the upper 0 to 15 cm depth. The effect of different integrated nutrient management treatments did not increase the microbial biomass significantly over the complete reliance on fertilizing the crop with optimum nutrient requirement. The biochemical assay indicated higher enzymatic activity in the upper 0 to 15 than 15 to 30 cm depth of the soil. The influence of FYM, paddy straws, as well as *Glyricidia* was superior on enzymatic activity when combined with fertilizers.

Key words : Alfisols, Integrated Nutrient Management, Soil microbial biomass, Soil enzymes.