

## **To study the diverse nutrient management and cropping arrangement on soil microbial growth and monetary returns in rice-wheat based arrangement**

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**ABSTRACT :** An Experiment was conducted during three years (2011-12, 2012-13 and 2013-14) in clay loam soil, slightly alkaline in reaction (pH 7.5 kg/ha), medium in organic carbon (0.66%) and available N (312 kg/ha), high in available phosphorus (9.4 kg/ha) and high in available in potassium. The treatments consisted with the 4 different cropping systems (CS1 Green manuring sunhemp-Rice-Wheat, CS2-Rice-Chickpea- Sesame, CS3-Rice-Berseem, CS4-Rice-Veg. pea-Sorghum) and three nutrient managements M1-100% Organic (1/3 N through each of FYM, Vermicompost and Neem oil cake), M2 -100% Inorganic (100% NPK through fertilizers), M3-INM (50% NPK through fertilizer + 50% N through organic sources) with 3 replications in Strip plot design. The growth of bacteria ( $48.10 \times 10^5$ ), fungi ( $41.65 \times 10^3$ ), azotobacter ( $25.67 \times 10^3$ ), actinomycetes ( $13.55 \times 10^3$ ) and phosphorus solubilizing bacteria ( $16.65 \times 10^3$ ) cfu/g soil was maximum in 100% inorganic nutrient management in rice berseem cropping system during the experiment and improved the rice equivalent yield of this cropping system.

**Key Words :** Cropping systems, economic status, agronomic management, soil quality, yield.