

## Effects of Chemical and Biological Fertilizer on, Yield, Nitrogen Uptake and Nitrogen Harvest Index of Rice

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**Abstract :** A factorial experiment was applied to evaluate the effect of chemical and biological fertilizer on yield, total nitrogen uptake and NHI of rice. Four biological treatments including:(M1:no fertilizer),( M2:10 ton/ha cow dung ),(M3:20 ton/ha cow dung) and (M4:5 ton/ha azolla compost) and four chemical fertilizer treatments including: (S1: no fertilizer),(S2:40 kg N /ha),(S3:60 kg N /ha) and ( S4:80 kg N /ha ) were compared. Results showed that highest rate of yield (3387 kg/ha) and total nitrogen uptake (81.4 kg/ha) were reached the highest value at M4. Among the chemical fertilizers the highest grain yield (3373 kg/ha) and total nitrogen uptake (87.7) belonged to highest nitrogen level (S4).Also biological and chemical fertilizers were no significant on Harvest index (NHI). Interaction effect of chemical × biological fertilizers didn't show significant difference between all parameters except of yield, as the most grain yield were obtained in M4S4. So it can be concluded that using of biological fertilizers at appropriate rate and type, considering plant requirement, may improve grain yield, nitrogen uptake and use efficiency in rice.

**Keywords :** azolla, fertilizer, nitrogen uptake, rice, yield

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