

**NUTRIENT LEVELS AND TRACE ELEMENTS IN RICE PLANT
UNDER DIFFERENT INPUT MANAGEMENT SYSTEMS: THE FIRST
YEAR IN TRANSITION**

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Rice plant nutrients uptake behaviour is very important in site-specific nutrient management (SSNM) to determine timing and doses of different nutrients. This study was conducted to investigate the impact of different inputs management systems (IMS) on bioaccumulation of nutrients and trace elements at different growth stages of rice plant. Leaf samples were collected at seedling, panicle initiation and 50% flowering stages from conventional (Department of Agriculture recommendation), reduced (50% Department of Agriculture recommendation and 50% organic manure) and organic manure applied plots. Leaf total Nitrogen (N), Phosphorus (P), Potassium (K), Calcium (Ca), Magnesium (Mg) and trace elements (Mn, Cu, Fe, Zn, As, Cd and Pb) were determined using standard analytical procedures. Data were statistically compared by mixed procedure and mean separation was done by Tukey's HSD test using SAS. Results revealed that, N, P, Ca, Mg, Cu, Mn, Pb and As of leaf tissues were significantly differed ($p < 0.05$) across three IMSs. However, K, Fe, Zn, and Cd of leaf tissues were not significantly different ($p > 0.05$) across IMSs. Leaf tissues contents of all analysed elements except Zn and P were significantly different ($p < 0.05$) across the studied time periods. Plant uptake of all analysed elements except As, Cd and Pb in all three treatments were significantly higher at the 50% flowering stage in comparison to other growth stages. Differential plant uptakes of nutrients and trace elements were observed in three IMSs at each growth stage. Dry matter of each treatment has significantly increased at seedling, panicle initiation and 50% flowering stages across growing season ($p < 0.05$) at three IMSs. Differences in uptake behaviours of rice plants in three IMSs emphasized the relevance of SSNM on the basis of IMSs.

Keywords: Input Management Systems, Paddy, Plant nutrients, Trace elements