

## **EFFECT OF FERTILIZER MANAGEMENT IN PADDY FARMING ON HEAVY METAL ACCUMULATION IN PLANT**

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Heavy metals can enter to the food chain mainly through soil and water. Many chemical fertilizers contain heavy metals that can cause serious problems in human health. This study was conducted to determine the effect of fertilizer application on plant heavy metal concentration and heavy metal accumulation in edible part of rice grain. Sampling was done at 14 weeks after planting from no fertilizer, only organic fertilizer, only inorganic fertilizer and organic and inorganic fertilizer added plots during last 15 years. Sampled plant parts were analyzed for selected heavy metals (Zn, Cu, Fe, Cd, Pb) using atomic absorption spectroscopy. Experimental design was Completely Randomized Design. According to the results a significant difference of seed heavy metal content was observed among tested treatments ( $p < 0.05$ ). Highest Zn content of 39.13 mg/kg was detected in organic and inorganic fertilizer added plot and lowest Zn content of 24.76 mg/kg was observed in inorganic fertilizer added plot. Highest seed Cd content of 0.19 mg/kg was detected in organic fertilizer added plot and no detectable Cd content was observed in organic and inorganic fertilizer added treatment. Highest Cu content (1.49 mg/kg) was detected in organic fertilizer added plot and lowest Cu content (1.08 mg/kg) was detected in plot without fertilizer. Organic fertilizer added plot reported the highest seed Pb content of 1.42 mg/kg while the lowest Pb content (0.75 mg/kg) was detected in plot without fertilizer. Highest seed Fe content (31.99 mg/kg) was detected in no fertilizer treatment while the lowest value of 4.49 mg/kg was reported in inorganic fertilizer added plot. However, seed heavy metal contents reported in each treatments were well below the limit of the proposed CORDEX MPL.

**Keywords:** Fertilizer, Heavy metal, Paddy plant