

## **HEALTH RISK ASSESSMENT OF HEAVY METALS CONTAMINATION IN RICE AND SOIL OF YAR HUSSAIN, SWABI, KHYBER PAKHTUNKHWA, PAKISTAN**

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### **Abstract**

This study aimed to investigate heavy metals contamination in the rice and soil samples of different cultivated field in Yar Hussain Swabi. The rice and soil samples were crushed, powdered and then digested in Aqua Regia. All the samples were analyzed for heavy metals concentration by using atomic absorption spectrometer (A Analyst 700). The concentration of the heavy metals in the rice and soil samples were found as Pb (4.64 mg/kg), Cd (0.92 mg/kg), Zn (42.02 mg/kg), Mn (50.04 mg/kg), Ni (5.46 mg/kg) and Cr (20.41 mg/kg), Pb (5.04mg/kg), Cd (1.12), Zn (30.15mg/kg), Mn (65.36mg/kg), Ni (4.96mg/kg), Cr (32.08mg/kg) respectively. Heavy metals evaluated in all the rice and soil samples were found above the World Health Organization (WHO) maximum permissible limits.

In terms of health risk, the observed highest concentrations of these elements in the rice were calculated through Hazard Quotient (HQ) and health risk index (HRI). It could have an adverse effect on human health and should be the subject for further investigations.