

## **Assessment of Essential and Nonessential Metal Concentration in Selected Edible Fruit and Leaf Vegetables Grown with Adiahferom River, Tigray, Ethiopia**

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**Abstract :** In this piece of study, food safety questions and potential health risks make this as one of the most serious environmental concerns. Then, the levels of essential and non-essential heavy metals concentration were studied in Onion, Carrot, Swiss chard and Lettuce vegetables and compared the permissible levels with international guidelines for safe food. The concentration of Fe was found in the higher concentrations compared to other metals analyzed or significantly different at 95% confidence level than the rest metals studied in this study. However, the levels of the concentration of Cd and Pb exceeded the permissible level set by WHO specifications in water samples, Cd and Pb exceeded the permissible level set by FAO/WHO specifications in all vegetable samples collected from Adiahferom River Fe and Cu were also found below the recommended levels. The higher concentration of Pb and Cd above the permissible level in vegetables used for human food may pose health risk to consumer. However, the Fe hasn't any health effect they take on from the Adiahferom body River. Mostly, the levels of metals in similar vegetable samples differed between the three sampling site, that may be due to variation in sources and processes of contaminations.

**Keywords :** Adiahferom, turbidity, temperature, physico-chemical, assessment

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