

## **MAIZE CROPS IN MINING ZONES OF MÉXICO. A THREAT TO HUMAN HEALTH?**

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Corn products are one of the bases of Mexican diet. Safe maize crops become then a relevant health issue. Unfortunately not all crop fields are located in pollutant-free areas. Green house studies of the development and heavy metal's absorption of maize plants (*Zea mays* L. cv H-515) rose in tailings, and soils collected at various distances from mining wastes (two of them actually used for maize cultivation) were carried out. Plants were harvested and evaluated for physical parameters such as weight, stem and leaves length, and number of leaves. Concentrations of Zn, Pb, Fe, Cu, As and Cd were measured in the respective soil and plant parts. As expected, the highest metals' concentrations were determined in plants grown in the tailings. Heavy metals contents in soils were: Fe>Zn>Pb>As>Cu> Cd. Higher concentrations were found in roots with respect to aerial plant parts. After 70 days growth in one of the experiments, range concentrations in roots varied as: Zn (54.7 to 3555 mg/kg), Pb (11.1 to 320 mg/kg), Cu (10.4 to 90.1 mg/kg), Cd (1.3 to 55 mg/kg), and As (0.1 to 0.4 mg/kg). The highest bioconcentration factors were determined for Cd and Zn. Although As reached the lowest concentrations in roots, it presented a high translocation factor. Grains collected from other experiment reflected this fact with concentrations up to 0.4 mg/kg As. Clear differences were found in plants weight and development according to the degree of contamination of their respective soil. Results show the need to avoid maize rising in sites close to mining wastes.

Keywords: maize, mining, As and heavy metals