Environmental Implications of Cadmium and Zinc Bioaccumulation in Agronomic Crops. (A05-sankaran110108-Poster)

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Abstract:

Global industrialization has been accelerating the release of heavy metals and other pollutants into the soil, water and atmosphere. Two heavy metals that frequently occur together are cadmium and zinc. These metals can enter the food chain, have toxic effects on plants and animals and disrupt natural ecosystems. Studies on different agronomic crops such as wheat, soybeans and Indian mustard have shown that cadmium accumulates in high concentration in the seeds. The main objectives of this study are to examine the accumulation of cadmium in vegetative tissue and seeds as a function of concentration, developmental stage, and interaction with zinc. Interaction between cadmium and zinc may be important because zinc treatments may help mitigate cadmium phytotoxicity and accumulation in edible tissues, as has been shown in some studies. This research utilizes a combination of greenhouse experiments and single or dual radiotracers studies to examine, and bioaccumulation. The results are expected to provide empirical data concerning whole plant cadmium transport and phytotoxicity as well as information pertinent to potential agricultural use of cadmium-contaminated soils.

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