University of Zabol
Graduate School
Faculty of soil and water
Department of soli science

Thesis Submitted in Partial Fulfillment of the Requirement for the degree of Master of Science (M. Sc) in soil science

Title

The effect of soil and foliar nitrogen absorption of zinc and cadmium in Zea mays L

Supervisor
Dr. A. Gholam ali zadeh

Advisors

Dr. R. Iranipoor

By

Kamal Azizi

Abstract:

Cadmium is one of the elements that are widely found in soil and natural. It is normally associated with lead and zinc deposits found. Cadmium is one of the most important is that the accumulation of heavy metals in plants, high toxicity to humans and animals, high solubility in water and mobility in the soil as an important pollutant known. On the other hand, the effects of cadmium on the growth and characteristics of plant growth as a proxy for toxicity arises. This research greenhouse for agricultural research center located in shahre kord factorial randomized complete block design with three replications in order to study the effect of soil and foliar nitrogen and zinc absorption of cadmium in the Zea mays L plant was done. For this experiment, modified corn seed were 704 single grass and then determine the viability of seeds, the germination of the seeds were selected. To implement the plan of four levels of cadmium (0, 10, 20, 40 mg of cadmium per kg of soil) and three nitrogen levels (0, 100 and 150 kg per hectare) and three levels on the earth (0, 5 and 15 mg kg of zinc in the soil) and two surfaces are sprayed (0 and 5 grams of zinc per thousand liters of water) was used. According to the results, the highest cadmium uptake in shoot and root 4 40 mg of cadmium per kg soil, respectively. The lowest uptake of cadmium in shoot and root control level of cadmium was found, as well as cadmium on the shoot and root dry weight was significantly negative effect so that the least amount of dry weight in the 4 cadmium (40 mg kg), respectively. The lowest intake of cadmium at levels seen in the aerial spraying of cadmium and zinc, respectively, The effect was more pronounced at high levels of lead found in attracting less cadmium than the foliar application on earth that proves, But at the root of the lowest value of the soil on the surface of 3 to 15 mg per kg, respectively. The effect of nitrogen on nitrogen uptake of cadmium showed that the concentration of cadmium at first, but with increasing levels of nitrogen accumulation of cadmium reduction gained, which could be due to lower pH.

Keywords: cadmium, zinc, nitrogen, Zea mays L