

## **EFFECT OF SEWAGE SLUDGE APPLICATION ON UPTAKE OF ZINC AND COPPER BY SCALLION GROWN IN A CALCAREOUS SOIL**

Afsoon Halabianfar<sup>\*</sup>, Mahmood Kalbasi, Ahmad Mohammadi  
Department of Soil Science, Isfahan Azad University, Isfahan, Iran  
<sup>\*</sup> email: afsoon.halabianfar90@gmail.com

### **INTRODUCTION**

In recent years, there is a growing concern about sewage sludge application safety in arable lands. Applying sewage sludge enhances P, K, Cd, Cu, Zn and Pb availability to plants (Rezaie nejad and Afiyoni, 2001). The objective of this study was to investigate Cu and Zn uptake by basal plant (*Scallion*) as affected by increasing rates of sewage sludge application in a calcareous soil.

### **MATERIALS AND METHODS**

This experiment was conducted, in the Greenhouse of Azad University, Khorasgan campus. Three rates of sewage sludge (0, 4, and 16%) was mixed with 1 Kg of soil in pots replicated 3 times and basal plants were grown in the pots. Plants aerial parts were harvested and analyzed for Zn and Cu content using AAS.

### **RESULTS AND DISCUSSION**

Available Zn and Cu of the soil increased significantly by increasing the amount of applied sewage sludge from control to 16%. No significant difference was, however, found for Zn and Cu concentrations of plant as the result of sewage sludge application. The applied sewage sludge contained considerable amount of Zn and Cu which directly increased total Zn and Cu concentration of the soil. Furthermore, application of sewage sludge considerably increased the soil organic matter content of soil which in turn could enhance Zn and Cu chelation and consequently Zn and Cu availability to the plant. Therefore, Zn and Cu concentration may increase in basal plant grown in the sludge-treated soil. These results are in reasonable agreement with those previously reported by Karami (2004) and Sin *et al.*, (2007).

**Keywords:** scallion; sewage sludge; zinc; copper

### **References**

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The 1st International Conference on New Ideas in Agriculture  
Islamic Azad University Khorasgan Branch  
26-27 Jan. 2014, Isfahan, Iran

