



## **Effects of Arbuscular Mycorrhizal Fungus and Salicylic Acid on Nutrient Uptake by Maize (*Zea mays* L.) Seedlings in Cadmium Contaminated Media<sup>#</sup>**

Ferit Sönmez\*, Füsün Gülser

*Y.Y. University, Agricultural Faculty Soil Science and Plant Nutrition Department, Van, Turkey*

*Received June 01, 2014; Accepted June 06, 2014*

**Abstract:** The objectives of this study were to determine the effects of Arbuscular Mycorrhizal Fungus (AMF) and salicylic acid (SA) applications on nutrient uptake by maize (*Zea mays* L.) seedlings grown in cadmium contaminated media. Three different doses of salicylic acid (0- 1.0-2.0 mmol) were treated into 3 kg soil with and without AMF application. AMF and SA applications significantly increased plant length, fresh and dry weights, and decreased Cd contents and uptakes of corn seedlings. The lowest potassium (10.01 %), calcium (4.31 %), magnesium (1.28 %), iron (315.68 ppm), manganese (263.03 ppm), zinc (27.41 ppm), and copper (13.70 ppm) uptake means were obtained in the control treatment without AMF and SA applications. SA and AMF applications increased nutrient uptake by maize seedlings. All of the increases were found significant in SA treatments. AMF applications had significant effects in potassium and copper uptake. The highest potassium (31.22 %), calcium (10.93 %), magnesium (3.79 %), iron (644.47ppm), manganese (655.93 ppm), zinc (104.95 ppm) and copper (17.01 ppm) uptake means were obtained in 2.0 mmol SA treatment. As a result, AMF and SA applications had positive effects on nutrient uptake by maize seedlings growth in Cd contaminated media.

**Keywords:** *Salicylic acid, mycorrhizae, nutrient uptake, maize seedling.*

---

\*Corresponding: E-Mail: ferit\_sonmez35@hotmail.com; Tel: +90 5333013696; Fax: +90432 2251104

<sup>#</sup>This paper has been presented at (IESSV) 2014, Van, Turkey