

Fluoride Uptake by Spinach and Alfalfa in a Calcareous Soil

E. Chavoshi^{1*}, M. Afyuni² and M. A. Hajabbasi²

(Received: June 23-2014 ; Accepted : March 09-2015)

Abstract

Fluoride (F) is an essential element for humans and animals. The continuous ingestion of fluoride by humans and animals in excessive amounts has damaging effects. The objective of this study was to investigate the uptake of fluoride in spinach and alfalfa in an alkaline soil of Isfahan, Iran. Two plants were planted in lysimeters at Isfahan University of Technology research station site. The treatments consisted of two plants and three concentrations of F. Each treatment was performed in triplicate. All the plants were harvested after 125 days and the total plants' F concentrations were determined. The F concentration in both plants' roots were higher significantly ($p < 0.05$) than the plants' shoots at both treatments. The F concentration in spinach root was 2.5 to 3 times greater than those values in alfalfa root. Totally, the RCF_s and SCF_s values of F were very low. This showed that these plants did not uptake much fluoride from the soil.

Keywords: Fluoride, Spinach, Alfalfa, Transfer Factor.

1. Dept. of Soil Sci., Collage of Agric., Isfahan (Khorasgan) Branch, Islamic Azad Univ., Isfahan, Iran.

2. Dept. of Soil Sci., College of Agric., Isf. Univ. of Technol., Isfahan, Iran.

*: Corresponding Author, Email: chavoshie@yahoo.com