

**XVIII INTERNATIONAL  
ECO-CONFERENCE® 2014  
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**SAFE FOOD**



**PROCEEDINGS**

**NOVI SAD, SERBIA**

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## **SAFE FOOD**

**PROCEEDINGS**

**2014**

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## ALUMINIUM TOXICITY IN ACIDIC SOILS IN SERBIA

### Abstract

This paper presents the content of mobile aluminum in acid soils with special reference to its chemical nature, content and toxic effects on plants grown on acid soils Serbia. Al toxicity is the most important limiting factor for plant growth and development in the most acid soils. The content of mobile aluminum in these soils (average 26.08 mg 100 g<sup>-1</sup>) shows a very negative impact on yields of cultivated plants on acid soils. Using adequate pedo-meliorative measures Al mobility is reduced below toxic levels and significantly increased the productive value of the most important types of acid soils in Serbia.

**Key words:** *Aluminum, acid, content, soil, toxicity*

### INTRODUCTION

The high acidity of the soil is a serious problem in the production of the majority of plant species. Thus, Kamprath (1970) found that aluminum is the dominant cation in the adsorptive complex of leached acid soils in the northeastern United States, as well as tropical and subtropical areas with pH (H<sub>2</sub>O) value below 5.0.

Aluminum (Al) is not an essential element, but it is one of the most abundant elements in the earth's crust (7.5%), while in soil Al represented by approximately 7.5% (Gauthier, 2002). In the neutral and slightly acidic soil Al is in the form of insoluble oxides and the aluminosilicate. Thus, the aluminum in the soil is mainly linked to the aluminosilicate minerals (about 40%), while only a small amount (submicromolar)



















