

**XX INTERNATIONAL  
ECO-CONFERENCE® 2016  
28<sup>th</sup> - 30<sup>th</sup> SEPTEMBER**

# **SAFE FOOD**



**PROCEEDINGS**

**NOVI SAD, SERBIA**

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**IX SAFE FOOD**

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**NOVI SAD, SERBIA**

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**PROCEEDINGS**

**2016**

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- Institute for Food Technology, Novi Sad
- Ecological Movement of Novi Sad

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- Russian State Agrarian University – MTAA, Moscow, Russia
- International Independent Ecological- Politicology University in Moscow Russian Federation
- Institute for Field and Vegetable Crops, Novi Sad, Serbia
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## CONTENT, MOBILITY AND TOXICITY OF ALUMINUM IN ACID SOILS OF CENTRAL SERBIA

### Abstract

This paper presents an overview of long-term research on the content, mobility and toxicity of aluminum in acid soils of Central Serbia. Numerous studies have shown high mobility of aluminum in these soils and its markedly toxic effect, particularly on susceptible crop species. Soil acidity is the major constraint to plant growth and development on most acid soils. High content of mobile aluminum in these soils (26.08 mg 100 g<sup>-1</sup> on average) indicates a high negative effect on crop yield on acid soils.

*Keywords:* aluminum, acidity, content, soil, toxicity.

### INTRODUCTION

Aluminum (Al) is not an essential element, but it is among the most abundant elements in the Earth's crust (7.5%) (Gauthier, 2002). Most of the aluminum in the soil is bound to aluminosilicate minerals (about 40%), and only small amounts (at nanomolar levels) occur in soluble forms capable of influencing biological systems (Bey and Nordstrom, 1991). Aluminum is either a main or a secondary component of most soil minerals, especially phyllosilicates or the so-called clay minerals (mainly belonging to the kaolinite group, smectite group, illite group), the amorphous mineral allophane, many aluminum hydroxides (boehmite, gibbsite) and oxides.

The presence and mobility of Al in the environment have been steadily increasing. Since 1970s and 1980s, in Europe, the USA and Canada, forest trees started to decay















