

5.6 VERA STOJŠIN<sup>1</sup>, DRAGANA BUDAKOV<sup>1</sup>, FERENC BAGI<sup>1</sup>, A. KONJEVIĆ<sup>1</sup>,  
Ž. ĆURČIĆ<sup>2</sup>, D. LATKOVIĆ<sup>1</sup>, J. CRNOBARAC<sup>1</sup>

<sup>1</sup> University of Novi Sad, Faculty of Agriculture, Trg Dositeja Obradovica 8,  
RS – 21000 Novi Sad

<sup>2</sup> Institute of Field and Vegetable Crops, Maksima Gorkog 30, RS – 21000 Novi Sad

## **INFLUENCE OF THE LONG-TERM MINERAL FERTILIZATION AND CULTIVAR ON SUGAR BEET ROOT ROT**

### **ABSTRACT**

Sugar beet production in Serbia is a challenging task since it is grown without irrigation, which leads to uneven supply of water during vegetation. Since rainfalls have irregular distribution and, more than often, cultivation procedures which have a task to preserve soil moisture are avoided, sugar beet plants suffer from drought especially during the second part of the vegetative period. This mostly applies to plants which develop exuberant leaves as in soils which are supplied with high doses of mineral fertilizers. Such plants are more susceptible to fungi causing root rot in extreme environmental conditions. Economically most important pathogens in Serbian production area are *Macrophomina phaseolina* (charcoal root rot), *Fusarium* species (*Fusarium* root rot) and only in some years and on individual parcels *Rhizoctonia solani* (*Rhizoctonia* root rot). The aim of this trial was to evaluate the effect of long-term mineral nutrition on root rot in 8 sugar beet cultivars. The trial was set up in 4 replications of 20 NPK combinations (1. Without fertilization to 20. 150 kg/ha of pure N, P and K each) and 8 commercial sugar beet cultivars (C1-C8). Results showed that both cultivar and the level of fertilization affected severity of root rot. Significant differences were notable between cultivars which implied that they have different level of susceptibility to root rot. At the same time, severe root rot appeared in plots with high mineral fertilization, whereas lowest intensity of root rot was present in plots with low level fertilization, especially with phosphorus and potassium excluding nitrogen.

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