



INTERNATIONAL INSTITUTE  
OF SUGAR BEET RESEARCH

# **ABSTRACTS OF PAPERS**

**77<sup>TH</sup> IIRB CONGRESS**

**Maximising sugar beet performance  
in a changing climate**

**11 -12 February 2020**

**Hotel Le Plaza  
Brussels, Belgium**

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### **INFLUENCE OF NPK MINERAL NUTRITION AND CULTIVAR ON SUGAR BEET ROOT ROT**

Sugar beet is susceptible to a number of root rot diseases, and they are regularly occurring in Serbia. Economically most important pathogens are *Macrophomina phaseolina* and *Fusarium* spp.. *Macrophomina phaseolina* is predominantly found in isolates from sugar beet, especially during dry and hot summers. For more than thirty years already, our team of researchers follows the occurrence and etiology of sugar beet root rot in Serbia. The aim of this experiment was to evaluate the effect of mineral nutrition on root rot in commercial sugar beet cultivars. The trial was set up in 4 replications of 20 NPK nutritions (N<sub>2</sub>, P<sub>2</sub>, K<sub>2</sub>, N<sub>2</sub>P<sub>2</sub>, N<sub>2</sub>K<sub>2</sub>, P<sub>2</sub>K<sub>2</sub>, N<sub>1</sub>P<sub>1</sub>K<sub>1</sub>, N<sub>1</sub>P<sub>2</sub>K<sub>1</sub>, N<sub>1</sub>P<sub>2</sub>K<sub>2</sub>, N<sub>2</sub>P<sub>1</sub>K<sub>1</sub>, N<sub>2</sub>P<sub>2</sub>K<sub>1</sub>, N<sub>2</sub>P<sub>2</sub>K<sub>2</sub>, N<sub>2</sub>P<sub>3</sub>K<sub>1</sub>, N<sub>2</sub>P<sub>3</sub>K<sub>3</sub>, N<sub>3</sub>P<sub>1</sub>K<sub>1</sub>, N<sub>3</sub>P<sub>2</sub>K<sub>1</sub>, N<sub>3</sub>P<sub>2</sub>K<sub>1</sub>, N<sub>3</sub>P<sub>3</sub>K<sub>2</sub>, N<sub>3</sub>P<sub>3</sub>K<sub>3</sub>) and 8 commercial sugar beet cultivars (G1-G8). Mineral nutritions were presented in scale from lowest to the highest dose (1. 50 kg/ha; 2. 100kg/ha and 3. 150 kg/ha). Weather conditions in 2019 were favorable for the development of sugar beet and incidence of the root rot was lower than in previous years. Statistically significant differences were not observed among root rot incidence in different cultivars. The highest intensity of plant decay and root rot was observed on plots with unbalanced NPK nutrition, especially where potassium levels were minimal. Balanced mineral nutrition led by the proper amount of potassium plays a key role in raising plant immunity and preventing root rot disease in sugar beet.