Selenium affects the Carbohydrate Metabolism of Potato (Solanum tuberosum L.) (C02-turakainen071720-Poster)

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Abstract:

Selenium (Se) is an essential element to human and animals. Earlier it was thought that higher plants are regarded not to require Se. The most recent studies have shown that Se enhance plants antioxidative capacity, delay senescence and promote growth. The electron micrographs showed that the leaves of young plants accumulated more starch in the chloroplasts. The energy reserves were used for the shoot growth later. The present study was undertaken to investigate if Se has the growth-promoting effect on the tuber yield, quality and growth roots and stolons of potato. Plants were cultivated without or with 0.075 and 0.3 mg Se/kg sand as sodium selenate (H2SeO4) in a glasshouse. The uptake and accumulation of Se was high in the underground organs of potato. The highest Se fertilization increased the yield and average tuber weight, but decreased the number of tubers per plant. Both Se treatments promoted stolons growth and the mean length of stolons. The stolons of Se-0.3 plants were also more branched compared with that in the control plants. No significant effects were observed in soluble sugar concentration of tubers. The lower Se application increased slightly the starch yield of tubers.

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Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 4:00-6:00 pm
Poster Board Number: 1132R

Keywords:
selenium, Solanum tuberosum L., tubers growth , soluble sugars