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International Conference

Plant Nutrition, Growth & Environment Interactions III



Programme and Abstracts

Vienna, Austria
February 20-21, 2017



International Conference

**Plant Nutrition, Growth &
Environment Interactions III**

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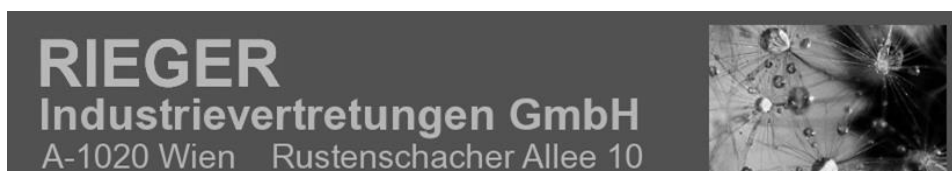
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OLChemIm was founded in 1991 in Czechoslovakia with the desire to produce the highest quality cytokinins and their immunoreagents. Now OLChemIm is a world supplier of Plant Growth Regulators such as cytokinins, gibberellins, auxins, jasmonates, strigolactones etc. For their detection OLChemIm also offers antibodies against them, labelled Plant Growth Regulators and immunoassay kits. Our broad-based experience in plant hormone chemistry makes our catalogue the most complete shopping centre for any plant growth regulator and our supply programme will be continuously expanded.

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Yield and Chemical Composition of *Cichorium Spinosum* L. in Relation To Nitrogen Rate

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In the present study, the effect of nitrogen (N) application rate on plant growth and quality of *Cichorium spinosum* L. was examined. Four nitrogen rates were applied, namely: a) Control (no added N), b) 200 mg L⁻¹ of total N, c) 400 mg L⁻¹ of total N, and d) 600 mg L⁻¹ of total N. Plant growth (rosette diameter, number of leaves, SPAD index, and fresh and dry weight) and chemical composition of leaves (sugars, organic and fatty acids, tocopherols, minerals and nitrates content) were recorded. Fresh weight increased up to 400 mg L⁻¹, whereas dry weight was not affected by N rate. Plants treated with N formed larger rosettes and more leaves comparing to control treatment, except for the rate of 600 mg L⁻¹ where number of leaves did not differ from control. SPAD index was higher at the rate of 600 mg L⁻¹. The application of N resulted in higher content of sugars, whereas tocopherols showed a significant decrease. In conclusion, the application of nitrogen rates up to 400 mg L⁻¹ is suggested for high yields without compromising the quality of the final product.

Effect of Salicylic Acid on the Phenolic Profile of *Brassica Rapa* Ssp. *Pekinensis*: Comparison Between Seedlings, Healthy and Infected Plants

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The influence of salicylic acid (SA) applied in the range 10-1000 µM on the qualitative and quantitative profile of flavonoids and phenolic acids in seedlings, and leaves of healthy and *Plasmodiophora brassicae*-infected *Brassica rapa* ssp. *pekinensis* (Chinese cabbage) plants was investigated using a HPLC method. In seedlings the treatment induced, in a dose dependent manner, the synthesis of caffeic, chlorogenic, ferulic and sinapic acid, and kaempferol. In healthy plants SA treatment caused an increase in the phenolic acids concentration of identified compounds, but not in a dose dependent manner; and a decrease in kaempferol levels. Upon infection, the amount of phenolic compounds was increased compared to healthy plants, however the effect of SA on the phenolic profile of infected plants was variable and no unequivocal conclusion could be drawn. None of the SA concentrations was sufficient to reduce disease symptoms. This result indicates specific responses of Chinese cabbage on the level of flavonoids and phenolic acids, to SA depending on developmental stage and health condition.