BOOK of ABSTRACTS

4th INTERNATIONAL CONFERENCE ON PLANT BIOLOGY

(23rd SPPS Meeting)

6-8 OCTOBER 2022
BELGRADE

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Institute for Biological Research "Siniša Stanković"
National Institute of Republic of Serbia, University of Belgrade

Faculty of Biology, University of Belgrade

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POSTER PRESENTATIONS

Sesquiterpene lactones content in lettuce cultivars affected by microbiological fertilisers and seasons

PP1-1

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The principal sesquiterpene lactones (lactucin, lactucopicrin, and its dihydro forms), known as contributors to bitter taste, were measured in green and red coloured lettuce using Ultra-performance liquid chromatography. Six lettuce cultivars ('Kiribati', 'Murai', 'Aquino', 'Gaugin', 'Aleppo' and 'Carmesi') were grown in a greenhouse experiment using microbiological fertilisers (EM Aktiv, Vital Tricho, and their combination) during three successive growing seasons (autumn, winter, and spring). The major sesquiterpene lactone was lactucopicrin with the highest level found in cultivar 'Carmesi' (0.65 mg/g dry weight) in autumn with the combination of fertilisers. The concentrations of lactucin, dihydrolactucin and dihydrolactucopicrin ranged from 0.001-0.085, 0.003-0.015, and 0.001-0.056 mg/g dry weight, respectively, and were not found in all lettuce samples. Generally, red cultivars showed higher content of lactones compared to green. Application of Vital Tricho and the combination of fertilisers led to an increased level of lactucopicrin, in some cultivars, in the range of 77-800% compared to unfertilised plants. Higher levels of lactucopicrin were found in the autumn trial compared to spring and winter. The present study suggests that genotype, fertilisers and season jointly affected the quantity of sesquiterpene lactones with emphasis on Vital Tricho, and/or the combination of fertilisers.

Keywords: Lactucopicrin, Lettuce, Microbiological fertiliser, Season, Sesquiterpene lactones

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