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(22nd SPPS Meeting)

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Faculty of Biology, University of Belgrade

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compared to control plants. Patterns of SGs biosynthetic gene expression are highly correlated to SGs' profiles during MeJA-elicitation treatments, giving clear evidence that the identified genes are a part of SGs' biosynthetic routes. All the results indicate that MeJA is a suitable elicitor that leads, through gene expression changes, to increased flux through the pathway and production of swertiamarin, sweroside and gentiopicrin, which can be used for future production of secoiridoids with the aid of biotechnological processes.

Keywords: *Centaurium erythraea*, gene expression, methyl jasmonate, secoiridoid glucosides, UHPLC-MS/MS analysis

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Total phenolic content and peroxidase activity in Salanova lettuce

PP4-17

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Lettuce (*Lactuca sativa* L.) belongs to a group of leafy vegetables commonly used as a salad in human nutrition. As minimally processed food product, it is an important source of vitamins, minerals and various antioxidative compounds. In our greenhouse experiment, two Salanova lettuce cultivars ('Aquino' RZ- green and 'Gaugin' RZ- red multi-leaf butterhead) were grown in the fertile soil during three successive seasons (autumn, winter and spring). The aim of the study was to examine the effect of different microbiological fertilizers (EM Aktiv, Vital Tricho and combination of EM Aktiv and Vital Tricho), cultivars and growing seasons on the total phenolic content and peroxidase activity. Our results showed that in all seasons red cultivar 'Gaugin' had higher total phenolic content compared to green cultivar 'Aquino'. Their highest level was measured in autumn with fertilizer Vital Tricho (549.14 μg GAE g^{-1} FW). The elevated phenolic status of red versus green cultivar was further strengthened by its higher level of peroxidase with the highest activity measured in spring with combination of fertilizers EM Aktiv and Vital Tricho (0.43 U mg^{-1} prot). The higher peroxidase activity and content of UV-absorbing phenolics, as plant-borne substrates of these enzymes, in the red cultivars indicate that the red leaves are better equipped to combat oxidative stress. Consequently, red cultivar 'Gaugin', with increased synthesis of health-promoting antioxidants, could be considered as functional food in human diet.

Keywords: lettuce, microbiological fertilizers, phenolics, peroxidase

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