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The effect of different genotypes and growing seasons on the content of nitrate and vitamin C in lettuce leaves

PP5-23

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Lettuce is a cool season crop, grown worldwide and important vegetable usually used as a salad. It is rich in vitamin C, which has significant role as antioxidant, but lettuce can also accumulate toxic compounds like nitrates. The purpose of this study was to examine the effect of different lettuce genotypes and growing seasons on the content of nitrate and vitamin C in the outer and inner leaves. Six cultivars ('Kiribati' RZ, 'Murai' RZ, 'Aquino' RZ, 'Gaugin' RZ, 'Aleppo' RZ, 'Carmesi' RZ) were grown in the greenhouse experiment during autumn, winter and spring. Vitamin C was determined spectrophotometrically at 550 nm and nitrate colorimetrically at 420 nm. Vitamin C ranged between 3.64-12.41 mg per 100 g FW in autumn, 3.68-7.34 mg per 100 g FW in winter and 3.05-7.72 mg per 100 g FW in spring. Cultivar 'Carmesi' had the highest level of vitamin C in the outer leaves (9.15 mg per 100 g FW) and 'Gaugin' in the inner leaves (12.41 mg per 100 g FW), both in autumn. Nitrate content ranged between 258.77-908.2 mg kg⁻¹ FW in autumn, 296.62-977.64 mg kg⁻¹ FW in winter and 42.74-450.74 mg kg⁻¹ FW in spring. Cultivar 'Carmesi' had the highest level of nitrate in the outer leaves (977.64 mg kg⁻¹ FW) and 'Aleppo' in the inner leaves (701.45 mg kg⁻¹ FW), both in winter. Nitrate content in all seasons and genotypes stayed within the limit of EC regulation for protected lettuce. Generally, vitamin C was allocated to the inner and nitrate to the outer leaves. Results showed that genotype and growing season can affect the content of vitamin C and nitrate in lettuce leaves.

Keywords: lettuce, season, vitamin C, nitrates

In search for the new bio-fungicide: grow suppression of fungal pathogen - gray mold disease (*Botrytis cinerea*)

PP5-24

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Gray mold disease caused by the necrotrophic fungus *Botrytis cinerea* affects many plant species, including crops. It can be found on over 200 dicotyledonous and couple of monocotyledonous plants, and cause significant damage in viticulture, horticulture, and production of vegetables and small fruit crops. It can infect mature or senescent tissues, plants prior to harvest, or even seedlings. It is conventionally treated by various groups of fungicides which can be harmful for environment and can induce resistance in *B. cinerea*. Thus, with the aim to search for bio-treatment of gray mold disease, we isolated *B. cinerea* from strawberry fruits and tested extracts from various