



E474

Evaluation of antioxidant properties of microgreens grown under different conditions

Gergely Zsolnay, Csilla Benedek

Semmelweis University, Faculty of Health Sciences, Department of Dietetics and Nutrition

Microgreens are young and tender, newly sprouted, immature plants without roots, that are harvested after the development of the cotyledon leaves, or seed leaves, usually between 10 and 14 days from seeding. They are attractive dietary sources of valuable nutrients, being rich in phytochemicals like phenolic compounds, anthocyanins. The purpose of this study was to evaluate the antioxidant properties of Brassica (broccoli, mizuna, kohlrabi) microgreens grown in different mediums (untreated coconut or pure cellulose fiber vs. soil) and under different light sources (6500 K white light vs. red/blue light). Differences in total phenolic concentration, antioxidant capacity, flavonoid and monomeric anthocyanin content of the microgreens depend primarily on the botanical origin. In many cases significant differences were proven between the plants investigated, hence, these are the most prominent in the case of monomeric anthocyanin content, where kohlrabi reached the highest values, as expected. The second factor determining antioxidant properties was the type of the growing medium: generally, the highest values were achieved for untreated coconut fiber, this exerting a high stress on the plants due to its high Na- and K-ion load. The lowest antioxidant values were obtained for plants grown on soil, this providing ideal conditions and thus a lower stress level for microgreens. As regards the effect of the light source used, this also produced significant differences, leading to higher values for intermittent red/blue light. The results of the present research highlight the nutritional potential of microgreens, i.e. their considerable antioxidant power and phenolics, including flavonoid and monomeric anthocyanin content.