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The active phenolic compounds of edible plants sprouts

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Sprouts are a group of plant products, which in recent years has become more and more important among consumers who appreciate a healthy lifestyle. The aim of the study was to analyze phenolic compounds in sprouts of selected field bean plants, including Lens Mill., *Vicia L., Trifolium L.* and *Medicago L.*, in order to determine their content and antioxidant activity. After optimal consumption maturity sprouts was collected, frozen, lyophilized and ground. Dry material (100 mg each) was extracted with 70% MeOH, using an automatic ASE extractor (Dionex ASE 200 extractor). In order to purify the phenolic fraction, the extracts, after being dissolved with water, were applied on the micro-columns SEP-PAK C18 (waters associates). The micro-columns were first washed with water to remove the sugars and then with 40% MeOH (phenolic fraction). The obtained fractions were analyzed for the content of phenolic compounds (using high-performance liquid chromatography) and their antioxidant activity was determined (using TLC-DPPH thin layer chromatography technique in combination with derivatization and graphic image processing). The sprouts of the studied field bean plants contained different groups of phenolic compounds. The highest total content of polyphenols was found in lentil germ extract (12.70±0.18 mg/g d.w.), followed by hairy vetch (7.07±0.09 mg/g d.w.). The compounds of the alfalfa cultivars (La Bella Campagnola and Pomposa) exhibited the strongest antioxidant properties. The result of the research indicates that sprouts of field bean plants are the source of phenolic compounds with antioxidant properties.

Biography

Iwona Kowalska is a Researcher at the Department of Biochemistry and Crop Quality of Institute of Soil Science and Plant Cultivation-State Research Institute in Pulawy, Poland. She has received her PhD in 2009. She is an author and co-author of approximately 20 papers in reputed journals and one book chapter. Currently her works focus on isolation, structure and antioxidant activity determination of natural compounds, mainly secondary metabolites. She is also interested in the application of simple bench-top bioassays based on thin-layer chromatography to screen natural samples for the presence of free radical scavengers.

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