Sprouts as potential sources of dietary antioxidants in human nutrition

Zujko M.E.[1*A-D], Terlikowska K.M.[1C,D], Zujko K.[2D], Paruk A.[2B], Witkowska A.M.[1EF]

1. Department of Food Commodities Science and Technology, Medical University of Białystok, Poland
2. Students Scientific Association of the Department of Food Commodities Science and Technology, Medical University of Białystok, Poland

---

A - Conception and study design, **B** - Data collection, **C** –Data analysis, **D** - Writing the paper,
E – Review article, **F** - Approval of the final version of the article

---

ABSTRACT

Purpose: The present study evaluates antioxidant activity, as well as polyphenol and flavonoid contents in common sprouts, available on the Polish market. The aim of this study was to extend our already published food databases.

Materials and methods: Ten seed species from four plant families were analysed. Total polyphenol content of sprout extracts was determined using the Folin-Ciocalteau method. Total flavonoid content was assessed by the aluminium chloride colorimetric method. Total antioxidant status was measured using FRAP and ABTS methods.

Results: The FRAP antioxidant potential was 0.60-2.53 mmol TE (trolox equivalents)/100 g FM (fresh mass), and arranged in descending order it was: white mustard>cress>radish>broccoli>chickpea> sunflower>mung bean>wheat>green lentil>alfalfa), while the ABTS potential was 3.92-16.19 mmol TE/100 g FM (according to decreasing value: white mustard>green lentil>chickpea>sunflower>mung bean>cress> alfalfa>wheat> broccoli> radish). The polyphenol content was 160-774 mg GAE (gallic acid equivalents)/100 g FM, and flavonoid content 15-53 mg QE (quercetin equivalents)/100 g FM.

Conclusion: Our results suggest that sprouts in comparison to other foods, despite small weight can be powerful sources of antioxidants. Special attention in human nutrition should be paid to white mustard sprouts as they are excellent source of polyphenol and flavonoid and are characterized by tremendous antioxidant activity.

Key words: Antioxidant potential, polyphenol, flavonoid, sprouts.

DOI: 10.5604/01.3001.0009.5052