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Czech J. Food Sci.

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Comparison of phenolic content and antioxidant capacity of red and yellow onions.

Czech J. Food Sci., 31 (2013): 501-508

The total polyphenol (TP), flavonoid, proanthocyanidin (PAC) content, and antioxidant capacity of both onion varieties (red and yellow) were compared. The content of TP, flavonoids, and PAC was determined by Folin-Ciocalteu colorimetric method, $AlCl_3$, and by DMAC colorimetric method, respectively. The results showed that the contents of TP and flavonoids decreased from the outer to the inner layers in both onions, but there was no significant difference in PAC content. The outer layers had the highest antioxidant activity of extracts followed by a continuous decrease towards the inner layers in both varieties. The contents of phenolic acids and flavonoids were quantified by HPLC. Gallic acid, ferulic acid, and quercetin, as the main

compounds in polyphenols, were detected in each layer of both onions. The red variety showed better antioxidant activity than yellow onion according to the linoleic acid system and DPPH assay. The higher contents of TP and flavonoids were associated with higher antioxidant activity.

Keywords:

Allium cepa L.; antioxidant activity; polyphenols; flavonoids

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