Title Changes occurring in compositional components of black soybeans maintained at room temperature for different storage periods

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Abstract

Changes in compositional components of black soybeans, including isoflavone, anthocyanin, protein, oil, and fatty acid, were investigated for the first time in soybeans maintained at room temperature for different storage periods. Isoflavone and anthocyanin profiles in hydrolysed extracts were characterised by column chromatography and HPLC-DAD-ESI/MS spectrometry analysis. These components decreased markedly during storage, whereas protein, oil, and fatty acid showed a slight decrease. The individual isoflavones and anthocyanins observed in black soybeans were as follows, in order of abundance: genistein > daidzein > glycitein; cyanidin-3-*O*-glucoside > dephinidin-3-*O*-glucoside > petunidin-3-*O*-glucoside. In particular, genistein (518.4 → 415.7 → 274.8 μg/g) and cyanidin-3-*O*-glucoside (6.53 → 2.92 → 1.49 mg/g) showed the greatest decrease for a storage time of two years. The scavenging activities of DPPH and ABTS radicals during storage also decreased in comparison with those of observed before storage. Our results can be used to improve our understanding of the relationship between storage times and the components from black soybeans.