

Differential glucosinolate profiles of radish leaves in response to postharvest drying treatment

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Abstract

The aboveground parts of radish (*Raphanus sativus* L.) are typically discarded after harvesting the roots. However, numerous bioactive compounds have been identified in radish leaves, and dried leaf products have garnered attention as a health food owing to their high fiber content. Here, we assessed the morphological and physiological characteristics of the leaves of 14 commercial radish cultivars and the effects of postharvest drying treatment on their glucosinolate (GSL) contents. The morphological and physiological characteristics of radish leaves exhibited considerable variation, depending on the cultivar. ‘Baekbong’ and ‘Baekja’ presented higher values for the assessed morphological and physiological characteristics than other cultivars. ‘Baekja’ had the best growth parameters, including leaf length and fresh and dry weights, among the tested cultivars. The total and individual GSL content was the highest in the cultivars ‘Sincheongilpum’ and ‘Taebaek’ at harvest. However, after 10 d of postharvest drying in a greenhouse at ambient temperature, the GSL content was the highest in the cultivars ‘Cheongbok plus’ and ‘Taebaek’. The results of the multivariate data analyses indicated that ‘Taebaek’ is a highly distinctive cultivar in terms of shoot physiology, morphology, and GSL content. The GSL content and profiles were differentially affected by both radish cultivar and postharvest drying treatment.