Title Influence of pressure/temperature treatments on glucosinolate conversion in broccoli (*Brassica oleraceae* L. cv Italica) heads

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Abstract

Glucosinolates are a group of secondary plant metabolites that are found in the Brassicaceae family. Upon hydrolysis by the endogenous enzyme myrosinase, a large number of compounds can be formed of which some are potentially anticarcinogenic, while others are largely inactive. Furthermore, some bioactive compounds are unstable. Therefore, it is not only important to determine the type and amount of glucosinolates present or hydrolysed in a given plant, but it is also relevant to investigate the type of hydrolysis products. In this research, the effect of combined pressure–temperature treatments (100–500 MPa, 20–40 °C) on the glucosinolate conversion and the kind of hydrolysis products was studied in broccoli, both during treatment and after autolysis. The results, showed that high pressure can induce glucosinolate hydrolysis during treatment, promote the formation of isothiocyanates after treatment and that relatively more indole oligomers are formed during treatment than during autolysis. These results indicate that pressure treatment limits the loss of glucosinolates and its health beneficial products.