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Increasing the bioactivity of red cabbage vegetables via optimizing myrosinase activity

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Myrosinase, an enzyme found naturally in *Brassica* vegetables, is responsible to hydrolyse glucosinolates into bioactive compounds. Thermal processing of *Brassic* vegetables could inactivate myrosinase enzyme and hence reduce the beneficial hydrolysis products. Reinitiating glucosinolates hydrolysis by adding natural sources of myrosinase (e.g. rocket, watercress, mustard seeds and horseradish) to cooked red cabbage (as powder) was adapted in this study. Thermal degradation of glucoraphanin and sinigrin in red cabbage was determined. In addition, sulforaphane, allyl isothiocyanate and goitrin were measured in the studied red cabbage (Raw, cooked and cooked after adding *Brassica* condiments). The results showed that glucoraphanin and sinigrin were predominantly stable after thermal processing of red cabbage in vacuum sealed bag. Limited amount of sulforaphane was detected in the raw and cooked red cabbage. Adding 2% of *Brassica* condiments (e.g. rocket, watercress, mustard seeds and horseradish) to cooked samples led to substantial increase in sulforaphane formation. Allyl isothiocyanate and goitrin were detected only in the cooked red cabbage, but not in the raw red cabbage, however a significant increase was recorded after adding *Brassica* condiments. This study shows that the hydrolysis products formation can be optimised by the addition of low levels of *Brassica* condiments to cooked *Brassica* vegetables.

Biography

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