

Title The effect of steaming on the glucosinolate content in broccoli
Author R. Verkerk, J.J. Knol and M. Dekker
Citation ISHS Acta Horticulturae 867:37-46. 2010.
Keyword broccoli; glucosinolates; myrosinase; steaming; health protective

Abstract

Total and individual glucosinolates were measured after different duration of steaming broccoli (*Brassica oleracea* L. var. *italica*). During steaming, the temperature profile, cell lysis and inactivation of myrosinase were assessed as well. Steaming resulted in high retention of total aliphatic and indolyl glucosinolates in the cooked product. Only after extensive steaming of broccoli (30 min) substantial losses of total indolyl glucosinolates of 55% and total aliphatic glucosinolates of 8.5% were observed. Steaming broccoli for more than 6 min result in complete inactivation of the hydrolytic enzyme myrosinase. However, steaming of broccoli for less than 6 min may result in a high intake of glucosinolates, in the presence of a residual active myrosinase, allowing the release of health-protective breakdown products of glucosinolates after consumption.