

Title            A review of the influence of postharvest treatments on quality and glucosinolate content in broccoli (*Brassica oleracea* var. *italica*) heads

Author          Rod B. Jones, John D. Faragher and Sonja Winkler

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### **Abstract**

The parameters for maintaining visual and nutritional quality in broccoli heads after harvest are well understood, with low temperature maintenance being of paramount importance. Recently, much attention has been focussed on the phytochemicals contained within broccoli, glucosinolates in particular, that may help prevent the onset of certain cancers and cardiovascular disease. Relatively little is known, however, of the effects of commonly used postharvest handling procedures designed to maintain broccoli quality on glucosinolate content. This review looks at the effects of temperature, relative humidity, storage under controlled atmosphere (CA) or modified atmosphere packaging (MAP) and processing on glucosinolate content in broccoli heads. In addition, the significant effect of cooking on glucosinolate content is reviewed. The most important postharvest conditions necessary for maintaining broccoli quality are low temperature (<4 °C) and high relative humidity. These conditions maintain cellular integrity and in the process appear to maintain glucosinolate content by preventing the mixing of glucosinolates with myrosinase. One of the most important processes in the postharvest chain that has the most critical effect on glucosinolates, however, is the cooking method employed, with steaming for 2 min being the most effective way to maintain glucosinolate content.