Title Effect of heat treatment on Mg-dechelation activity in relation to chlorophyll degradation during storage of broccoli florets

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Abstract

Effect of heat treatment on Mg-dechelation activity in stored broccoli (*Brassica oleracea* L. Italica Group) florets was determined. Chlorophylls (Chls) *a* and *b* contents in the control broccoli florets decreased greatly during storage at 15°C, while the content changed very little in heat-treated broccoli florets. Mg-dechelation activity was found in two different molecular weight fractions - a low molecular weight (5,000-10,000) fraction (LMWF) and a high molecular weight (more than 10,000) fraction (HMWF), which seemed to contain Mg-dechelatase. The activities of both fractions in the control broccoli florets increased during storage at 15°C, but the enhancement of the activity was suppressed by heat treatment. Thus, Mg-dechelation activities in LMWF and HMWF are involved in Chl degradation of stored broccoli florets, and the suppression of yellowing in heat-treated broccoli florets could be in part due to the inhibition of Mg-dechelating action by heat treatment.