

Title Effect of Mg-dechelation activity on chlorophyll degradation in stored broccoli florets  
Authors S. Kaewsuksaeng, N. Yamauchi, Y. Funamoto, M. Shigyo and S. Kanlavanarat  
Citation ISHS Acta Horticulturae 712: 705-710. 2006.  
Keywords chlorophyll degradation; chlorophyll derivatives; Mg-dechelation; broccoli

### Abstract

The effect of storage temperature on Mg-dechelation activity and the formation of chlorophyll (Chl) derivatives in stored broccoli (*Brassica oleracea* L.) florets were determined. The hue angle levels of broccoli florets declined during storage at 15°C, whereas those levels showed almost no change at 4°C. Chls *a* and *b* contents in broccoli florets decreased greatly after 4 days of storage at 15°C, whereas the contents at 4°C hardly showed any change for the first 3 days of storage at 4°C and then decreased slightly. Chlorophyllide (Chlide) *a*, pheophorbide (Pheide) *a*, pyropheophorbide (Pyropheide) *a*, C13<sup>2</sup>-hydroxychlorophyll (C13<sup>2</sup>-OHChl) *a* and pheophytin (Phy) *a* as Chl *a* derivatives were detected during storage by HPLC analysis. Chlide *a*, C13<sup>2</sup>-OHChl *a* and Phy *a* levels in broccoli florets decreased concomitantly with the enhancement of Pheide *a* and Pyropheide *a* levels during storage at 15°C. The Mg-dechelation activity increased after 4 days of storage at 15°C, while the activity at 4°C decreased. These findings suggest that Mg-dechelating action together with chlorophyllase could be involved in Chl degradation in stored broccoli florets.