

**Title** Characterization of Mg-dechelation activity with chlorophyll degradation in stored broccoli florets

**Author** Samak Kaewsuksaeng, Naoki Yamauchi, Yoshio Funamoto, Masayoshi Shigyo and Sirichai Kanlayanarat

**Citation** Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

**Keywords** chlorophyll degradation; Mg-dechelation; broccoli

### **Abstract**

Characterization of Mg-dechelation activity with chlorophyll degradation of stored broccoli (*Brassica oleracea* L.) florets was performed to clarify the mechanism of chlorophyll degradation. The Mg-dechelation activity of an extract from yellow broccoli, which was stored for 4 days at 15°C, was compared to that of fresh broccoli using chlorophyll in a as substrate. The pH optimum and stability of both extracts were 8.0 and 8.5, respectively. The temperature stability was 40°C in both extracts. Chelating compound, radical scavengers and reducing agents had different inhibitory affects. Ascorbate, and especially quercetin, had more effective inhibitory activity on both extracts. Two different molecular weight substances, one a low molecular weight (5,000-10,000) type and the other a high molecular weight (more than 10,000) type, were present in the extracts. The Mg-dechelation activity of both molecular weight types in yellow broccoli extract was higher than in fresh broccoli extract, suggesting that Mg-dechelation activity could be involved in chlorophyll degradation of stored broccoli florets.