Title UV-B irradiation retards chlorophyll degradation in lime (*Citrus latifolia* Tan.) fruit

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Citation Postharvest Biology and Technology, Volume 59, Issue 1, January 2011, Pages 110-112

Keywords Lime; Chlorophyll degradation; Yellowing; UV-B

Abstract

Peel yellowing is a major postharvest problem of lime fruit. Research was conducted to control peel yellowing by UV-B irradiation. Mature green lime fruit were irradiated with UV-B doses at 0 (control), 8.8, and 13.2 kJ m^{-2} and then stored at 25 °C in darkness. UV-B treatment at 8.8 kJ m^{-2} efficiently delayed the decrease of chlorophyll content. A high level of chlorophyllide *a* accumulated in mature green fruit and then gradually decreased with the progress of peel yellowing. The chlorophyllide *a* level was higher in 8.8 kJ m^{-2} UV-B-treated fruit than it was in the controls. The pheophorbide *a* level declined in lime fruit treated with 8.8 kJ m^{-2} UV-B, especially during the development of yellowing. In addition, the pheophytin *a* level increased by 8.8 kJ m^{-2} UV-B treatment at the late period of storage. We concluded that UV-B treatment effectively suppressed chlorophyll degradation in mature green lime during storage, which suggests that UV-B irradiation is a usable method for prolonging the postharvest life of lime fruit.