

Title Effect of UV-B irradiation on chlorophyll degradation and postharvest physiology in stored lime (*Citrus latifolia* Tan.) fruit

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Abstract

UV-B irradiation was applied to lime fruit to investigate its effect on chlorophyll degradation and chlorophyll-degrading enzyme activities in stored limes. Lime fruits at the green mature stage were irradiated with UV-B at the dose of 0 (control) and 19.0 kJ m⁻². Then, the treated fruits were stored at 25°C in a relative humidity (RH) of 85-90%. UV-B treatment efficiently delayed the decrease of the hue angle value and the contents of chlorophylls *a* and *b*. In treated fruits, chlorophyllase, chlorophyll-degrading peroxidase and pheophytinase activities as well as the Mg-dechelation were suppressed. Moreover, the weight loss and the opening of stomata were reduced by UV-B treatment. We concluded that UV-B treatment effectively suppressed chlorophyll degradation in mature green lime during storage, suggesting that this effect could be due to the suppression of chlorophyll-degrading enzyme activities.