Title Effect of UV-C irradiation on chlorophyll degradation and quality change in Chinese kale (*Brassica oleracea* var. *alboglabra*)

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Keyword UV-C irradiation; chlorophyll; Chinese kale

Abstract

Chinese kale is widely consume in Thailand due to it contains a lot of nutrition. However, it has a short storage life especially at room temperature due to yellowing of the leaf. In this study, UV-C irradiation at 1.8, 3.6, 5.4 and 7.2 kJ m^{-2} was introduced to observe the quality of Chinese kale (*Brassica oleracea* var. *alboglabra*) during storage at 20°C. The irradiation dose of 3.6 and 5.4 kJ m^{-2} delayed chlorophyll degradation and maintained the highest total chlorophyll, chlorophyll a and chlorophyll b contents. It also delayed the reduction of hue angle and retarded the activity of chlorophyll degrading enzymes. Moreover, UV-C irradiation reduced the ethylene production rate which demonstrated by decreasing of ACC oxidase activity. Furthermore, weight loss and respiration rate were also suppressed by UV-C treatment. The results suggest that UV-C irradiation could be a useful non-chemical treatment to delay chlorophyll degradation and maintain the quality in Chinese kale.