

**Title** Effect of UV-C irradiation on chlorophyll degradation and microbial growth in fresh cut Chinese kale (*Brassica alboglabra*)

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#### **Abstract**

The effect of UV-C irradiation at 1.8, 3.6, 5.4 and 7.2 kJ.m<sup>-2</sup> on chlorophyll degradation in fresh cut Chinese kale stored at 10°C was investigated. Fresh cut Chinese kale which did not treat with UV-C was a control treatment. Weight loss, chlorophyll breakdown, colour changes, and ethylene and carbon dioxide productions were increased in control treatment. Irradiation of fresh cut Chinese kale at 1.8 kJ.m<sup>-2</sup> delayed chlorophyll breakdown and maintained a green colour of fresh cut Chinese kale. In addition, weight loss, respiration and ethylene production rate were also reduced by 1.8 kJ.m<sup>-2</sup> of UV-C irradiation compared with that of other treatments. However, the population of microbial growth determined by using total plate technique showed that UV-C irradiation at 3.6 kJ.m<sup>-2</sup> was the most effective treatment in controlling of bacterial growth. The highest microbial growth was found in control. The results suggested that UV-C irradiation at 1.8 kJ.m<sup>-2</sup> could delay the chlorophyll degradation in fresh cut Chinese kale while the higher dose may cause an adverse effect. In contrast, for the microbial safety purpose, UV-C treatment at 1.8 kJ.m<sup>-2</sup> was not enough for controlling the bacterial growth.