

**Title** Influence of Postharvest UV-C Hormesis on the Bioactive Components of Tomato during Post-treatment Handling

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**Citation** Food and Bioprocess Technology, 4, Number 8, 1463-1472, 2011

**Keywords** Antioxidant; Ascorbic acid; Bioactive; UV-C hormesis; Lycopene; Tomato; Total phenolic; Trolox equivalent

### **Abstract**

Mature green tomato fruit exposed to a pre-determined hormetic dose of UV-C ( $3.7 \text{ kJ/m}^2$ ) and untreated fruit (control) were stored at  $13 \text{ }^\circ\text{C}$  and 95% relative humidity. After 10, 20, and 30 days of storage, fruits were randomly sampled and transferred to room temperature ( $23 \text{ }^\circ\text{C}$ ) for 7 and 14 days to allow ripening. Edible pericarp was excised from the equatorial region for subsequent analyses of the antioxidant components. Ascorbic acid and total phenolic contents were higher in the UV-treated tomatoes, but UV treatment significantly reduced the lycopene content of the tomatoes. The UV treatment did not affect significantly the antioxidant activity of the hydrophilic extract, expressed as Trolox equivalent. Both storage and ripening period were found to affect positively all the bioactive components of tomato evaluated in this study. The results suggest the possible existence of a window of opportunity for the development of practices based on storage temperature and duration to preserve the beneficial effects expected from UV-C hormesis and to circumvent its negative impact on lycopene synthesis.

<http://www.springerlink.com/content/87483242j264tk21/fulltext.pdf>