

**Title** Effect of UV-C on nutritional value of fresh-cut tomato  
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### **Abstract**

The influence of ultraviolet (UV-C) light on nutritional quality of minimally processed tomatoes was investigated. Tomato plants cv. Durinta were grown in a greenhouse and tomatoes were harvested fully ripe and stored at 12°C. After 3 d in storage, tomatoes were cut in 5-mm thick slices and were immediately subjected to UV-C light for 0, 2, 6, and 12 min (0, 2.8, 8.2, and 16.4 kJ m<sup>-2</sup>). Tomato slices (100 g), sourced from five different tomatoes, were placed into polypropylene cup-and-lid packages and stored at 3-5°C for 0, 1, 3, and 7 d. The vitamin C content in the control slices showed a decrease of approximately 30% (188 µg/g DW). Content of Vitamin C in fresh-cut tomato was increased by UV-C treatment. After 7 d in storage, vitamin C content (213 µg/g DW) of tomato slices irradiated at 8.2 kJ m<sup>-2</sup> was over 40% higher than that of the tomato slices not subjected to UV-C irradiation. Total amount of phenolic compounds also significantly increased with UV-C irradiation, whereas no significant difference in total phenolic content was found due to cutting stress only. Evaluation of other quality characteristics, including microbial and sensorial quality, lycopene content and antioxidant activity also support the value of UV-C light as a sanitizing treatment. UV-C irradiation can improve nutritional value of fresh-cut tomatoes without a detrimental impact on other quality parameters. The results emphasize the importance of assessing the effect of postharvest handling and processing steps on the quality of fresh commodities.