

**Title** Impact of atmospheric ozone-enrichment on quality-related attributes of tomato fruit  
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#### **Abstract**

Tomato fruit (*Lycopersicon esculentum* L. cv. Carousel) were exposed to ozone concentrations ranging between 0.005 (controls) and 1.0  $\mu\text{mol mol}^{-1}$  at 13 °C and 95% RH. Quality-related attributes and organoleptic characteristics were examined during and following ozone treatment. Levels of soluble sugars (glucose, fructose) were maintained in ozone-treated fruit following transfer to 'clean air', and a transient increase in  $\beta$ -carotene, lutein and lycopene content was observed in ozone-treated fruit, though the effect was not sustained. Ozone-enrichment also maintained fruit firmness in comparison with fruit stored in 'clean air'. Ozone-treatment did not affect fruit weight loss, antioxidant status,  $\text{CO}_2/\text{H}_2\text{O}$  exchange, ethylene production or organic acid, vitamin C (pulp and seed) and total phenolic content. Panel trials (employing choice tests, based on both appearance and sensory evaluation) revealed an overwhelming preference for fruit subject to low-level ozone-enrichment (0.15  $\mu\text{mol mol}^{-1}$ ), with the effect persisting following packaging.