

**Title** Tomato redness for assessing ozone treatment to extend the shelf life  
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#### **Abstract**

Ozone could be seen as an alternative to refrigeration in order to enhance tomato shelf life in areas where cold facilities are not available. However, the effect of ozone on fruit ripening and quality is still unclear. From the other side, it is well known that tomato ripening can be correlated to the development of red color. Therefore, experiments were carried out to develop a redness index to characterize the dynamics of ripening which was further used to characterize the effect of ozone on storage and ripening. Several gaseous ozone treatments were applied. Color changes from green to red were monitored. Ozone treatment delayed both the development of red color as well as of rotting. Color development and rotting followed a trend like that described by Hill's equation. Shelf life was enhanced by 12 days when treated tomatoes were stored at 15 °C. The longer shelf like was mainly due to a reduction in surface microbial count. Analysis through mathematical modeling allowed establishing the dynamics of shelf life as a function of red color development.