

عنوان مقاله:

Diverse postharvest responses of tomato fruits at different maturity stages to hot water treatment

محل انتشار:

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نویسندگان:

Siamak Kalantari - *Department of Horticultural Sciences, College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran*

Mohsen Hatami - *Department of Horticultural Sciences, College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran*

Mojtaba Delshad - *Department of Horticultural Sciences, College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran*

خلاصه مقاله:

Sensitivity of tomato fruits to chilling injury limits its storage and marketability. This study investigated the effect of hot water treatment (HWT) on reducing the consequences of chilling injury (CI) with respect to quality attributes of tomatoes during storage. Tomatoes were harvested at three ripening stages: mature green, pink, and red; dipped in hot water at 45°C for 15 min; and stored at three storage temperature conditions: 5°C, 13°C, and a simulated condition (SC: 3 days at 25°C and then at 5°C) representing the time between harvest and consumption by consumer. Quality analysis was carried out at the beginning of the experiment and every 10 days of storage 3 days of shelf life evaluation. Fruit color, lycopene content, weight loss, and CI were evaluated during the experiment. HWT reduced CI in mature green tomatoes but had little effect in pink and red fruits. It also caused delay in surface color development and reduced weight loss. During storage, heated mature green fruits often had significantly more lycopene content but low a* compared with unheated ones, whereas in heated red fruits, both a* and lycopene content were lower than unheated ones. This study showed that HWT could be used to reduce CI in mature green tomatoes, but not in pink and red fruits.

کلمات کلیدی:

chilling injury, color, heat treatment, maturity stage, postharvest

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