Ozone: a promising alternative to prochloraz for cold storage of pomegranate

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Abstract

There is no detailed study on the effects of different ozone doses, in comparison with fungicide, on the quality losses of pomegranates during cold storage. In the present study, the use of ozone as an alternative to fungicide during cold storage of pomegranate was investigated. Pomegranates were exposed to 1, 2 and 3 ppm gaseous ozone for 3 h and dipped into Prochloraz solution (0.9%) for 10 s. Control samples were only treated with air at the same condition. The fruit were packaged in modified atmosphere bags and stored at 6 °C and 90 \pm 5% relative humidity for 4 months. All ozone doses and fungicide treatment suppressed respiration rate and retarded acidity loss in pomegranates. Fungicide and 1 ppm ozone treatments maintained vivid red color of pomegranates during storage. The 1 ppm ozone was the best treatment for decreasing decay rate of fruit, while high doses had a negative effect. Ozone exposure (1 ppm for 3 h) in air can be an alternative to fungicide during cold storage of pomegranate.