

Effect of Organic Oils Fumigation and Ozonized Cold Storage on Fruit Quality in Cripps Pink Apples

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Ethylene management in organically grown apples during storage is limited and alternative organic methods are required. The objective of this investigation was to examine the effects of lemon and cinnamon oil fumigation on storage life and quality of 'Cripps Pink' apple which were kept in cold storage with and without ozone. The fruit were fumigated with 3µl L^{-1} lemon or cinnamon oil for 24 h and untreated fruit were kept as a control. The fruit were stored at 0.5 °C ± 0.5 °C with and without ozone for 100 and 150 days. Following each storage period, ethylene production and various fruit quality parameters were determined. The rate of mean climacteric peak ethylene production was significantly lowest in both treatments as compare to the control but the difference among the ozonized cold storage as compared to cold stored without ozone was not significant in 100 and 150 days stored fruit. The climacteric ethylene peak was delayed only in 150 days cold stored fruit with ozone (8 d) as compared to without ozone (3.56 d). Mean fruit firmness was significantly higher in the fruit fumigated with lemon or cinnamon oil compared to control for both storage time. The treated fruit resulted in significantly higher levels of ascorbic acid, antioxidant capacity and total phenol as compared to the control for both storage times. In conclusion, lemon oil or cinnamon oil fumigation was effective in suppressing ethylene production and maintaining quality in 100 -150 days cold stored fruit.

Biography

Rahil Malekipoor has studied her PhD at Curtin University. Her PhD research is about regulation of postharvest life and quality of organic apple fruits using natural ethylene antagonists.

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