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Effect of 1-MCP on shelf-life and quality of kiwifruit stored under ambient conditions

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Abstract

The study was conducted to observe the effect of different concentrations of 1-MCP on post-harvest life and quality of kiwifruit. Kiwifruits cv. Allison were treated for 24 h at 20°C with different concentrations of 1-methylcyclopropene (0.5, 1, 2 µl/l) and un-treated fruits served as control. The fruits were transferred to ambient storage (22 ± 4°C; 65–70% RH) after treatments, and observations on different quality parameters were recorded at 3-day interval. The results indicated that all concentrations of 1-MCP influenced PLW, fruit firmness and decay loss in kiwifruit but 2 µl/l concentration was the most effective. PLW in untreated fruits was very high (18.6%) in comparison to 1-MCP treated fruits at the end of 18th day of storage, and 1-MCP (2.0 µl/l) treated fruit were much firmer (31.7 N) than untreated fruit (8.4 N). Fruits treated with 1-MCP (2.0 µl/l) showed the least (8.2%), and untreated fruits the highest fruit decay (22.2%) at the end of storage. TSS in the untreated fruits showed sudden increase on 6th day (12.5%), which increased up to 12th day (16.8%) and declined thereafter (15.7%), whereas in 1-MCP (2 µl/l) treated fruits, it increased sharply from 15th day. 1-MCP (2 µl/l) treated fruit retained ascorbic acid better than other treatments and control. Total acidity and titratable acidity decreased during storage without any significant difference among the treatments. Thus, it could be concluded that 1-MCP (2 µl/l) treated kiwifruits could be stored for 18 days at ambient conditions without much loss in fruit quality.

Keywords

1-MCP, firmness, decay, quality parameters.