Effects of lemongrass oil application and modified atmosphere packaging on the postharvest life and quality of strawberry fruits

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Abstract

Current research aimed to study the influence of lemongrass oil (0.2%) and modified atmosphere packaging (MAP) on the storage quality of strawberry (*Fragaria* x *ananassa* Duch.) fruits cv. 'Florida Fortuna', 'Camarosa', 'Rubygem' and 'Sahara'. Strawberry fruits are highly favoured by consumers because of their peerless flavour and health benefits, but are very sensitive to storage conditions and have only 2–5 days without any preservative or cold storage depending on the cultivar. In present research, fruits of four different cultivars of strawberries were exposed to these treatments: (i) immersing in pure water and storing without MAP (control treatment); (ii) immersing in 0.2% lemongrass oil (LO) and storing without MAP; (iii) immersing in pure water and storing with MAP; and (iv) immersing in 0.2% lemongrass oil and storing with MAP. Each treatment contained 6 replicates and each replication consists of 10 fruits. Fruits were stored at 4.0 ± 1.0 °C for 3, 6, 9, 12, 15, 18 and 21 days. Results showed that both MAP and lemongrass oil (LO) have significant effect on the weight loss, SSC, TA, fruit firmness, microbial & chemical spoilage and off-odour of strawberry fruits. Evaluation of the all parameters concluded that MAP bags could extend the storage duration of 'Sahara' to 18 days with acceptable attributes, 'Florida Fortuna' and 'Rubygem' to 15 days, and the 'Camarosa' to 12 days.