

Title Effect of exogenous putrescine on post-harvest life of strawberry (*Fragaria ananassa* Duch.) fruit, cultivar Selva

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Abstract

Effect of different concentrations of putrescine on post-harvest life of strawberry (*Fragaria ananassa* Duch.) fruit, cultivar Selva at 5 °C was studied. Fruits were immersed in 0.3, 0.5, 1 and 2 mM putrescine as well as distilled water (control) for 5 min, then transferred into the fridge (5 °C) together with untreated fruits (dry treatment). The rate of weight loss, ethylene production, flesh firmness, soluble solids content, titratable acidity and pH of fruits were determined 5, 9 and 13 days after the beginning of storage. Flesh firmness, appearance, color change and taste of fruits were also determined in the same intervals using a taste panel. Storage life of the strawberry fruits was significantly increased by the use of putrescine, so that the untreated and control fruits had 6 and 8 days storage life, respectively, while the immersed fruits in 1 and 2 mM putrescine were still suitable to be exposed in the market 12 and 14 days after the beginning of storage, respectively. No significant weight losses were observed in treated fruits compared to controls and dry treatment at all determination times. Ethylene production was decreased significantly by the use of putrescine. Untreated fruits (dry treatment) had the highest rate of ethylene production and the lowest rate was occurred in 2 mM putrescine treatment at all determination times (5, 9 and 13 days after the beginning of storage). The use of putrescine also prevented the softening of fruit flesh during the storage and kept their firmness, so that, the 2 mM putrescine treatment caused the highest fruit firmness at all determination times. Distilled water treatment (control) had the lowest fruit firmness 5 and 9 days after storage, while this occurred for the dry treatment 13 days after storage. Soluble solids content, pH and titratable acidity of the fruits were not significantly affected by the use of putrescine, but the highest and lowest rate of titratable acidity were related to the 2 mM putrescine and dry treatment, respectively, at the three determination times. Overall, the quality of fruits was improved by the use of 2 mM putrescine in terms of properties evaluated by the taste panel.