The effects of polyamines and UV-C irradiation on postharvest quality of strawberry fruit

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Abstract

The aim of this study was to improve strawberry fruit storability by testing the effect of treatment with polyamines and UV-C irradiation. Strawberry fruits of cultivar 'Selva' were immersed in distilled water as control, putrescine 1 mM, putrescine 2 mM, spermidine 1 mM and spermidine 2 mM for 5 min and then half of treated fruits were exposed to UV-C irradiation at 0.72 kJ m^{-2} dosage. During ten days of storage at 4°C, changes in fruit quality, firmness, weight loss, vitamin C, titratable acidity, anthocyanin content and antioxidant capacity were evaluated at 2-day intervals. The results showed that almost all traits were affected by polyamine and among four polyamine treatments applied; putrescine 2 mM was more effective in maintenance of quality attributes. Polyamine treated fruits showed less weight loss, a higher firmness value, and less variation in titratable acidity, vitamin C and antioxidant capacity than control. UV-C irradiation could only affect on some evaluated traits such as anthocyanin content and fruit firmness. Best results were recorded for integrated treatment of application of 2 mM putrescine and UV-C irradiation.