Post-harvest Shelf-life extension of fruits of two strawberry (*Fragaria× ananassa* Duch.) cultivars with amino acids application in soilless culture system

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Abstract

Strawberry fruit has very short postharvest life because of its soft texture. To evaluate application effects of amino acids on Post-harvest life of Strawberry fruits, a factorial experiment was carried out based on completely randomized design in Research Greenhouse of Ferdowsi University of Mashhad. Experimental treatments were three amino acids (Arginine, Glutamine and Alanine) at three levels (0, 500 and 1000 µM) and two cultivars of strawberry (Camarosa and Gaviota). Strawberry fruits were harvested at commercial maturity stage and transported to the laboratory. Then fruits were kept in plastic containers and stored at 4 ºC. After 15 days, total soluble solids (TSS), titrable acidity (TA), flavor index (TSS/TA), total anthocyanin, total phenol, phelavonoid, total antioxidant capacity and percentage of fruit weight loss were determined. Results showed that the highest flavor index (18.41) was observed in Alanine1000- cultivar Gaviota. Also, the lowest fruit weight loss was related to Alanine 500- cultivar Gaviota (18%) and Arginine 500- cultivar Gaviota (14.5%) treatments. These two treatments were not statistically different. The highest fruit-weight loss (65.5%) was observed in Glutamine 500- cultivar Gaviota. Also, Glutamine 500- cultivar Gaviota had the highest Antocyanine. It can be concluded from this experiment that application of Arginine and Alanine amino acids prior to harvest of strawberry fruits can increase their postharvest life and quality.

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