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Time-course of post-harvest fruit deterioration in ‘Martinez’ Spanish lime (*Melicoccus bijugatus*) as affected by temperature and bioregulators

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Spanish limes (SL) deteriorate rapidly after harvest, and for this crop there is little post-harvest management information derived from research. Experiments were conducted to determine the effect of post-harvest storage temperature and exposure to bioregulators on the deterioration of fresh fruits of SL. Fruits of the ‘Martinez’ selection were dipped for 180 seconds in aqueous solutions of aminoethoxyvinylglycine (AVG) (50 and 100 mg/L), a commercial extract of the marine alga *Ascophyllum nodosum* (Stimplex®)(1 ml/L), and kinetin (50 mg/L), air-dried, and then stored at 10, 20, or 30 C. At the start of the post-harvest treatments, the fruit peel was green and glossy. External deterioration (yellowing, browning, and/or gloss loss) was recorded using a photographic time-course progression for 12 days. Fruits deteriorated more rapidly at 30 C without bioregulators, becoming non-commercial 3.5 days after harvest. At 30 C, exposure to AVG delayed fruit deterioration for 2 more days, while kinetin and the *A. nodosum* extract kept the fruit pleasing for 1 more day as compared to untreated fruits. Deterioration was further retarded in fruits treated with bioregulators and stored at 10 or 20 C, with fruits remaining externally pleasing 8 days after exposure to AVG, the *A. nodosum* extract, or kinetin. These results show that even at 30 C treatment with these bioregulators extended SL shelf life, and that lower temperatures and bioregulators may be used to further extend the post-harvest life of SL. This research is part of UPR-RUM project SP-439.

Key Words: *Ascophyllum nodosum*. AVG. Biostimulants. Quenepa. Kinetin. Sapindaceae. Tropical fruits

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