

Title Effect of application of waxes with vegetable oil and sucrose on the quality of Mexican guava cv. 'Media china'

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Abstract

The shelf-life of Mexican guava during their marketing process is limited to two weeks at 8-10°C. Production is concentrated at end year which decreases the prices and discourage the production. Techniques to improve the marketing process by extending the shelf-life are necessary. The objective of this work was to evaluate the quality and physiological changes of guava treated with different types of waxes in an effort to increase shelf-life. Two different sets of waxes were used, one containing vegetable oil (1, 2, and 3%), sucrose (1-3%), emulsifier, anti-microbial chemicals, and polisher (0.02% each one) in water and the other with the vegetable oil content increased (4 and 5%). The treated guava fruits were stored at 10°C for 0–20 days and transferred to 25°C for 6 days. The respiration rate, the ethylene, ethanol and acetaldehyde production, weight loss, color and sensory quality were analyzed periodically. Fruits treated with waxes with 1% of vegetable oil and 3% of sucrose presented a delayed color change, but their sensory quality was seriously affected and the weight loss was higher than control. Fruits treated with waxes with high vegetable oil content (5%) decreased their respiration rate (35%) in comparison with the control (55.98 ml CO₂ kg⁻¹ h⁻¹) whereas the ethylene production decreased to 1.78 µl kg⁻¹ h⁻¹. The visual quality, the aroma and color were higher than the control (112%, 200% and 15%, respectively); the acetaldehyde content was constant (67.15 µg g⁻¹), but the taste quality decreased notably (47%) because of an increase in the ethanol content; and lastly the weight loss was high (13%) in the treated fruits. In conclusion, the use of waxes could be an alternative to control the ripening process. However, it is necessary to improve the formulations in order to maintain fruit quality.