

Shelf life of banana Cavendish Giant (aaa), oranges and mangoes in polystyrene containers within refrigerated chamber

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Three researches were made to determine if the shelf life of bananas, oranges and mangoes, is increased when are stored in polystyrene containers closed and placed in refrigerated chamber with cool temperatures. Bananas were acquired when they were in greenness index 1, 2, 3 and 4. In the refrigerator they are applied temperatures of 10-12 °C. By each maturity index (1, 2, 3 and 4), the fruits were packaged in four containers (repetitions), which were opened every five days to observe signs of sensory maturity. The response variables were the color, strength, taste and soluble solids. When bananas with the maturity index one were stored in polystyrene containers closed it is shelf life was 21 days until appeared maturity index four, with the maturity index two was 12 days until reach maturity index four, but in the bananas who were confined in the tray of the refrigerator were badly damaged. In bananas with the maturity index three, maturity index four was expressed five days later, while in the control were observed signs of sensory maturity; however, through touch, manual pressure and sense of taste, it was felt that the firmness and taste of the control fruits were similar to those of fruits packaged in polystyrene containers. The soluble solids increased from index one until the index four, but diminished at appear sensory symptoms.

In oranges, the polystyrene containers closed were placed inside refrigerated chamber with temperature 3-9 °C, high humidity relative (85%) and renovation frequent from air by action of the chamber compressor. Oranges cv 'Valencia' were harvest directly from the orchard and washed with chlorinated water at 150 mg L⁻¹ sodium hypochlorite. The study variables were the color of the epicarp (shell) and the endocarp (pulp), polar and equatorial diameter, firmness of the pulp and total soluble solids concentration (°Brix) in the endocarp. The tone and purity of the yellow color of the shell (epicarp) and pulp or endocarp of the oranges increased significantly within polystyrene containers and, consequently, its quality was preserved and its shelf life was extended to more than 100 days without they have symptoms of deterioration by losses polar and equatorial diameter or decrease in total soluble solids. Inside polystyrene containers closed the temperature decreased until 2.0 °C with respect at temperature within the refrigerated chamber, reaffirming the principle of thermal insulation of the polystyrene, and its usefulness for packaging products (fruits) and resolve some of their physiological problems.

In mangoes, when the fruits were stored in polystyrene containers closed and placed in refrigerated camera with cool temperature (10-12 °C), high relative humidity (85%) and frequent air renewal according to operation of the compressor of the refrigeration equipment. Fruits were packed in four containers (repetitions), which were opened every five days to observe signs of sensory maturity. The response variables were the color, weight, strength, smell and taste. When the mangoes were stored in polystyrene containers closed had shelf life of 12 days to submit the sensory maturity index, on the contrary the control stored in the bottom tray of the refrigerator was badly damaged.

This technology can be used by producers of bananas, oranges and mangoes to take these products to places far from their origin without major deterioration of their shelf life, as well as by distributors, resellers and the general public, to preserve by more time their products and decrease the losses in the warehouse.