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FACTORS AFFECTING THE POST-CUTTING LIFE AND QUALITY OF MINIMALLY PROCESSED PINEAPPLE

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The suitability of 'Chambaka' pineapple for fresh-cut processing was investigated. Fruits were received via air freight from Hawaii and stored at 10°C until processed. After peeling and coring the fruits, the pulp was sliced into 1-cm-thick wedges (about 8 g each), dipped into chlorinated water, and kept in jars under a humidified flow of air or the desired gas mixture. Temperature was the main factor influencing the duration of post-cutting life and the final quality of the product. Post-cutting life ranged from over 2 weeks at 0°C to only four days at 10°C. The end of viable storage was detected by a pronounced rise in respiration followed by an increase in ethylene production rate. Peel tissue showed higher respiration and ethylene production rates than pulp and core tissues. At temperatures between 0 and 10°C no chilling injury was observed, although prolonged storage caused some browning. No major changes were detected in soluble solids content, pH or acidity of the wedges during storage. Mylar™ film on polystyrene cups allowed the accumulation up to 10% CO₂ and depletion down to 2% O₂ during a 9-day storage period at temperatures between 0 and 10°C. Oxygen concentrations below 5% were associated with the development of off-odors and flavors.

INFLUENCE OF CHEMICAL TREATMENT ON POLYPHENOLOXIDASE ACTIVITY WHILE RELATED TO COLOUR CHANGES OF MINIMALLY PROCESSED 'JONAGORED' APPLE

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Restrictions of sulfite usage for food preservation, associated with consumer's concern about its safety, generated the need for substitutes. Ascorbic acid was found to be less effective than SO₂ in controlling browning. Combinations of antibrowning agents have been used, aiming to enhance the effect of any single agent individually. Citric acid has often been used in conjunction with ascorbic acid as a chemical inhibitor of enzymatic browning.

The aim of this work was to evaluate the influence of a 5 min-dip in 42.5 mM ascorbic acid; 21.3 mM ascorbic acid + 34.0 mM citric acid; 14.2 mM ascorbic acid + 22.7 mM calcium chloride + 12.0 mM citric acid on polyphenoloxidase activity and phenolic content of fresh-cut apple (cv. Jonagored) during cold storage, and to look for relationship with enzymatic browning.

A 92% inhibition of PPO activity was achieved after 3 days at 4°C by previously immersing apple cubes in the ascorbic acid dip. Colour changes were correlated with the total phenolic content. No correlation was found between PPO activity and colour or total phenolic content of ascorbic acid - treated apple cubes.

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SHELF LIFE OF MINIMAL PROCESSED PINEAPPLE FRUIT PRODUCTS

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Nowadays, there is a tendency towards consumption of fresh or minimally processed fruit and vegetable products free of additive applications, but processing technology needs to be improved. The aim of this investigation was to study the minimal processing technique for pineapple products. Pineapple fruits (*Ananas comosus* L.) cv. Cayena Lisa, from Bobare region in the Lara state, were washed with sodium hypochlorite solution (25 ppm), peeled off and cut in slices, 1.5 cm thick. Fruit slices were put in plastic bags with an osmotic syrup solution (50% sucrose, citric acid 800 ppm, potassium sorbate 50 ppm) and blanched by immersion in hot water at 80°C for one minute. After cooling, the bags were thermostealed with or without vacuum application. The shelf life of the fruit products was evaluated after for three weeks storage at 4 or 28°C. The products were analyzed for texture, colour, water activity (aw), pH, soluble solid concentration (SSC) and microbiological quality. The quality performance of the products stored under vacuum at 4°C, showed good appearance, and the final values of other quality attributes were as follows: aw 0.938; SSC 36% and pH 2.88.

SENSORY AND MICROBIOLOGICAL CHANGES IN MINIMALLY PROCESSED CACTUS PEAR (*Opuntia ficus indica*)

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Cactus pears are difficult to peel due to the presence of spines. The minimal processing could be an interesting way to increase the acceptability of this fruit. Changes in gas composition, sensory and microbiological characteristics during the storage of minimally processed cactus pear were studied. Cactus pear fruits were washed (200 ppm Cl₂), manually peeled, treated or not with a citric acid solution (1%, 14°C, 10 min), centrifuged (500 rpm), packed in BB4 (EVA) and PE perforated bags and stored (4°C, 85% R.H.). Gas composition (% CO₂ and % O₂); sensory characteristics (quality and acceptability; using 1-9 points scales) and microbiological count (bacteria, mold and yeast) were determined. The experimental design was completely randomized and the results were analyzed by ANOVA. The CO₂ percentage was 42.6 and 43.3 and the O₂ percentage was 0.79 and 0.8 at 14 days of storage in the BB4 bag, for the samples with or without citric acid respectively. The treatment in PE bags presented a 0.03% CO₂ and 21.0% O₂ in the same storage period. The sensory characteristics remained constant during the storage period for almost all the quality attributes; the acceptability shows differences with the immersion treatment, causing a better acceptance for the fruit without immersion and in BB4 bags (7.1 points). The aerobic bacteria count was 10¹ - 10² cfu/g at the beginning of the storage period; after 14 days the PE bags presented 3 - 4 cfu/g. The yeast and molds count was less than 10 cfu/g until 14 days of storage; the *E. Coli* count was less than 3 col/g at the end of the storage period studied.