

Title Shelf life studies on processed peaches
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Abstract

A series of experiments were conducted on the preservation of fresh peaches using freezing and heat (hot-filled packaging). In the first experiment, the effects of four calcium salts (calcium chloride, calcium lactate, calcium citrate, calcium phosphate) on the texture of processed peach slices were determined. Peach slices were immersed in solutions containing dissolved calcium salts at levels of 0.5, 1 and 2% for 1 minute then stored at 4 °C for 3 days. Treatments with calcium salts were firmer than non calcium treated peach slices at all levels. Calcium lactate at 2% level was best in terms of texture and overall appearance. In a second experiment set, effects of calcium salts at 3% level was also determined for three different varieties of peaches (Autumn prince, Big Red, O'Henry) with a dipping time of 5 minutes. Increase in the level of calcium salts to 3% did not generally improve the texture of peach slices. The effect of calcium salt combined with antibrowning agents on shelf life of peach slices was also studied. Peaches of Autumn Prince Variety were lye peeled, dipped in 1% citric acid and were mixed with CaCl_2 at the levels of 0, 0.5 and 1% along with 0.5% citric acid and sodium erythorbate/ ascorbate each to prevent browning. In a final experiment, sugar was added to peaches in a 1:4 ratio with 0.5% sodium erythorbate or sodium ascorbate, 0.5% citric acid and CaCl_2 then samples were frozen at the temperature of -20° C and stored for 48 weeks or first cooked at 93 °C (200 °F) and then mixed with CaCl_2 at the same levels as frozen peaches followed by quick chilling and storage at room temperature for 32 weeks. Various shelf life parameters were evaluated including pH, color, total soluble solids (°brix), water activity, puncture force (texture) and microbial count at 0, 8, 16, 24, 32, 48 weeks. The calcium treated samples generally had better quality than non calcium treated. Sodium erythorbate and sodium ascorbate were equally effective in maintaining the color (L^* lightness) of frozen peach slices over the period of 48 weeks. Overall, processed peach slices were microbiologically stable over the storage period.