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**A STUDY OF PHYSICO-CHEMICAL AND QUALITY ASPECTS
OF FROZEN CHOWCHOW (*Secchium edule*)**

A PROJECT REPORT PRESENTED BY

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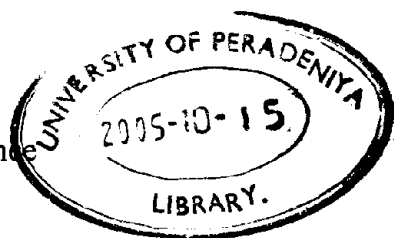
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A STUDY OF PHYSICOCHEMICAL AND QUALITY ASPECTS OF FROZEN CHOWCHOW (*Sechium edule*)

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Chayote/chowchow is a native Mexican fruit belonging to family Cucurbitaceae. It is a perennial and a seasonal crop which grows mostly in up country areas of Sri Lanka and a high production can be seen during the period of February to August. Fruits are used as an element of diet and can be preserved by pickling and sugar concentrating. The biggest problems associated with chayote fruit is, the postharvest losses due to shriveling and sprouting at the storage under room temperature. These losses can be minimized by wrapping in polyethylene bags or storing in refrigerators. But polyethylene bags increase moisture condensation and thereby increase the incidence of microorganisms. Chayote fruit is also susceptible to chilling injury at refrigeration conditions. Use of fungicides also can inhibit the decay organisms but it may increase the chemical hazards to the humans. Therefore alternative method of freezing is needed to preserve chayote retaining its fresh quality.

Refrigeration load of chayote fruit was calculated and the effect on freezing of chayote stored at -20°C were examined. Quality of slow and rapid frozen chayote was compared with fresh chayote after 1, 2, and 3 months of storage periods. Percentage weight loss, external appearance and physicochemical properties were recorded upon thawing at the end of each month of storage. Eating quality and microbial contamination of the product were examined after 3 months storage period. The weight loss of rapid frozen chayote stored at -20°C was less when compared with slow frozen chayote stored at -20°C . Physicochemical properties of ascorbic acid content, moisture content, pH, total soluble solid content and firmness of slow frozen chayote were also decreased with storage period and it showed poor eating quality as well as poor external appearance. Physicochemical properties except ascorbic acid content, and external appearance of rapid frozen chayote did not deviate much with those of fresh

chayote and eating quality of them was highly acceptable. Microbial growth of slow and rapid frozen chayote was less.

In the light of the results the rapid freezing can increase the shelf life of chowchow while keeping its fresh qualities.