

**PRELIMINARY INVESTIGATION ON
IMPROVING STORAGE QUALITY OF RAW AND
PROCESSED FRUITS AND VEGETABLES
(CASHEW APPLE & TOMATO) BY USING
LOCALLY AVAILABLE METHODS**

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UMARAMANI PUVANENDRAN

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**DEPARTMENT OF BOTANY
FACULTY OF SCIENCE
EASTERN UNIVERSITY
SRILANKA.
2000**

ABSTRACT

Mature cashew apples and tomato fruits were subjected to different types of packaging and were stored under different condition for preliminary investigation. Here polyethylene film was used for the packaging of fruits. Spoilage, weight loss and sensory quality were assessed after one month.

In cashew apple, fruits which were stored in the refrigerator had low spoilage rate. The treatments with low spoilage rate were selected for further investigation in order to improve their keeping quality, flavour desirability and general nutritional properties. The treatments selected included surface sterilization (2% NaCl) a combination of packaging with polyethylene film , vacuum packaging with polyethylene film. Surface sterilized fruits were also stored without packaging while some fruits were packed without surface sterilization. All the treatments were stored in a refrigerator. Microbiological spoilage was less in the surface sterilized polyethylene film packaged fruits. The weight loss of these treatments were low compared to those stored at room temperature. The sensory evaluation showed that the surface sterilized packaged cashew apple (S.V.P & S.P) was superior to the overall eating quality and taste to all the other treatments. However the texture of all treatments were entirely different from that of the fresh fruit. The cashew apples which were immersed in the 2% NaCl and stored at room temperature had a shelf-life of one week, acceptable sensory quality and had unfavorable odour.

Cashew apple were also processed in to various products in an attempt to increase their shelf-life. The cashew apple products such as *vatal*, candy, jam1, jam2, chutney1, chutney2 and pickle were prepared and stored both in a refrigerator and at room temperature. (1&2 indicate different method of preparation of the products). Shelf life and sensory quality were assessed. Sensory evaluation was performed immediately, after one month and three month intervals. All products retained their shelf life for three months when stored in a refrigerator. All the products except *vatal* & candy retained their quality for one month when stored at room temperature. However shelf life of

vatal and candy had more than two months when stored at room temperature. According to the sensory evaluation candy, jam², chutney² and pickle had superior eating quality. Eating quality is decreased with storage period except *vatal* and candy.

Half ripped tomatoes were surface sterilized with 2% NaCl, dried in air and were packed in different ways using paper and polyethylene film. These included polyethylene packaging with silicagel and 1000 ppm KMnO₄, polyethylene packaging with silicagel, polyethylene packaging. These fruits were stored at room temperature as well as in the refrigerator. In addition fruits were also wrapped with paper and stored at room temperature. Untreated fruits stored at room temperature was used as control.

Colour, weight loss, changes in titratable acidity were determined every week for a one month. Colour development and weight were superior in fruits packed in polyethylene stored in refrigerator. However acidity, colour, and weight loss of fruits packed in polyethylene were significantly different from that of the control. Titratable acidity decreased over storage period. However decrease was slower in fruits packed in polyethylene. Highly significant difference at 5% & 1% level of LSD was observed in the polyethylene packaging treatments. In the sensory quality all treatments were significantly different at 5% & 1% level of LSD from the control fruits. However sensory quality of normal polyethylene packaging refrigerated treatment was superior.

Tomato jam was prepared and stored both room temperature and refrigerator. The jam retained their quality after three months when stored at refrigerator and room temperature.

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