# PREPARATION AND STORAGE EVALUATION OF PAPAYA BLEND WATERMELON READY-TO-SERVE (RTS) BEVERAGE

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# ABSTRACT

Watermelon (*Citrullus lantus*) is one of the under-utilized fruit having nutritional and medicinal values. Only a few value-added products of watermelon fruit are available in the market of Sri Lanka. There is a need for the development of more value-added products using these fruits. A Ready-To-Serve (RTS) fruit beverage is becoming popular among Sri Lankans which can be produced with simple and low-cost technology. Therefore, this study was carried out to develop an RTS beverage using watermelon fruit juice.

Six recipes of papaya blend watermelon RTS beverage (RTS beverage of 50, 60, 70, 80, 90 and 100% of watermelon juice and 10, 20, 30, 40 and 50% of papaya juice were prepared with sugar, lime. The RTS beverages were assessed for physio-chemical qualities, organoleptic characters, and microbial tests to evaluate the suitability of these beverages for consumption and long shelf life.

The physio-chemical (titrable acidity, ascorbic acid, pH, Total Soluble Solids (TSS), and total sugar) and organoleptic (colour, aroma, taste, consistency, absence of off-flavour, and overall acceptability) qualities were analyzed after preparation and during storage. Seven points hedonic scale ranking method was used to evaluate organoleptic characters. According to Tukey's test, the mean scores for all assessed sensory characters varied significantly ($p<0.05$) in the freshly made papaya blend watermelon RTS beverages.

Based on the quality characters, the most preferred papaya blend watermelon RTS 10%, 30%, 40% papaya juice and 90%, 70%, 60% watermelon juice combinations were selected and subjected to storage studies at ambient (30°C) and refrigerate (4°C) temperature. Analysis was carried out after two week interval.

The findings of the storage study revealed that a declining trend was observed in the ascorbic acid, Total Soluble Solids (TSS), and total sugars with storage period, and an increasing trend was observed in titrable acidity, pH with storage period for all the treatment. The results of the physio-chemical analysis revealed that there were significant differences ($p<0.05$) between the treatments and period of storage the sensory analysis also showed that there were significant differences ($p<0.05$) for the organoleptic characters between the treatments. The highest overall acceptability was observed in the RTS beverage with 60% watermelon juice and 40% papaya juice combination.

Based on the results of physio-chemical characters, sensory attributes, and microbial tests, the RTS beverage with 60% watermelon juice and 40% papaya juice combination is the best treatment. This RTS beverage could be stored at ambient and refrigerate condition for two weeks without significant losses in quality attributes.

I hope to develop a new watermelon and papaya cutting tool for cutting fruits with the help of technology. The research was focused on the design and the development of the new version of the cutting tool was required to cutting watermelon and papaya fruits.

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