STUDY ON VALUE ADDED PRODUCTS OF PAPAYA-VARIETY: 'RED LADY'

BY

SAJINA SHIREEN MOHAMED ISMAIL

FACULTY OF AGRICULTURE

EASTERN UNIVERSITY

SRI LANKA

2014

ABSTRACT

Commercial potential of the papaya fruit is needed to be exploited in the form of its use in the preparation of value added products. This can boost the economic status of the tribal people of village areas and the country as whole. The present study was conducted to develop products by using locally available papaya fruit variety -'Red lady'. The experiment was laid out in the randomized complete block design (RCBD) with three replications. Data of the chemical analysis and storage study were analyzed by Analysis of Variance (ANOVA) ($\alpha = 0.05$) and mean separation was done with Duncan's Multiple range Test (DMRT).

Data related to sensory evaluation were analyzed using the Tukey's test. Both chemical and organoleptic analysis was done through Statistical Analysis System (SAS) software statistical package. The pulp prepared from papaya fruit was used for preparation of product (treatments). Such as, RTS (T_1), nectar (T_2), cordial (T_3), squash (T_4) and fruit bar (T_5).

The research work was carried out in three experiments. In experiment I, physico - chemical qualities of papaya fruit variety 'Red Lady' were performed. In this study chemical properties such as total soluble solid (TSS), pH, acidity, vitamin C (ascorbic acid), total sugar were analyzed and physical parameters of colour, weight, shape, and length of papaya fruit were taken. In Experiment II, nutritional, sensory evaluation and microbiological test were conducted. The sensory analysis revealed that, there were significant ($p<0.05$) differences for the organoleptic characters (colour, aroma, taste, consistency and overall acceptability) between the treatments. According to Tukey's test, the highest overall acceptability was observed in the fruit bar. Other

samples were moderately acceptable. The nutritional analysis was revealed that, values of chemical parameters have a similarity with value of the Sri Lanka Standard Institution (SLSI) of the same product. The microbial test revealed that, no bacterial growth was observed in the papaya fruit samples.

In Experiment III, Changes in chemical qualities, organoleptic characteristics and microbial safety of value added products of papaya fruit were studied at Ambient Temperature. After 12 weeks the chemical parameters such as ascorbic acid, pH, TSS and total sugar were decreased and titrable acidity was increased in the sample. Sensory evaluation revealed that there was a slight but significant ($p<0.05$) reduction in the overall acceptability scores of value added product of papaya from the freshly made products. The microbial test, there was no drastic effect on the quality of the product due to microbial growth in three months at ambient temperature. Therefore, it is safe for consumption up to 12 weeks of storage.

TABLE OF CONTENTS