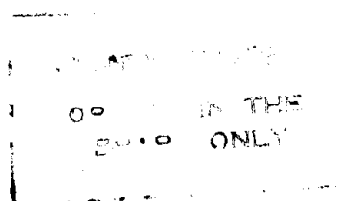


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**MONITORING OF SELECTED NUTRIENTS IN MANGO  
DURING THE PROCESSING FOR MANUFACTURING OF  
MANGO JAM**



A PROJECT REPORT PRESENTED BY  
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to the Board of Study in Chemical Sciences of the  
**POST GRADUATE INSTITUTE OF SCIENCE**

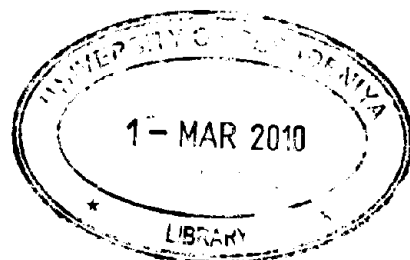
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for the award of the degree of*

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**ABSTRACT****MONITORING OF SELECTED NUTRIENTS IN MANGO  
DURING THE PROCESSING FOR MANUFACTURING OF  
MANGO JAM****I. H. Kulatunga**

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Mangoes belong to the genus *Mangifera* and the family of Anacardiaceae. Mango is a delicious fruit. Beyond being delicious it is a nutritious fruit containing vitamins such as A, B, C, E and K, minerals such as Calcium, Magnesium, Potassium, Sodium, Zinc, important enzymes such as mangleferin and lactase, antioxidants and fiber. Because of being a delicious and nutritious fruit, mango is used in manufacturing of so many food products such as Chutney, ice-cream, milkshakes, jam and juice. But during the process of manufacturing of such food products, some of the important nutrients in fresh mango can be destroyed. Therefore it is worthwhile to have specific, reproducible, rapid, simple and sensitive techniques to monitor the nutrient contents in fresh mango and in those food products. Hence, the work in this publication was focused on the studying of the change of selected nutrients in mango in the process of manufacturing of mango jam. The selected nutrients are Vitamin C, Potassium, Calcium, Magnesium and Sodium.

For this research, jam was prepared in the laboratory using the variety "Karuthakolomban". Moreover, samples of mango and pulp for analysis were withdrawn during the preparation of jam. Although several methods are available for the analysis of Vitamin C (L-ascorbic acid), cyclic voltammetry was used as it is highly sensitive. There, the three types of samples were prepared by blending and filtering. All the samples were made to pH of 3 using phosphate/citrate buffer and Oxalic acid was used as the stabilizer to stabilize ascorbic acid. Mineral compositions

of samples were determined using Atomic absorption spectroscopy. The samples for analysis were prepared by digesting the original samples with 69% Nitric acid.

It was observed that there is a considerable reduction of vitamin C and very small reduction of minerals in pulp and jam. One reason for that is, during the preparation of pulp, some amount of fiber is removed. With that fiber small amount of nutrients are removed. The lowering of L-ascorbic acid upon squeezing and heating is attributed to rapid oxidation forming dehydro-ascorbic acid.