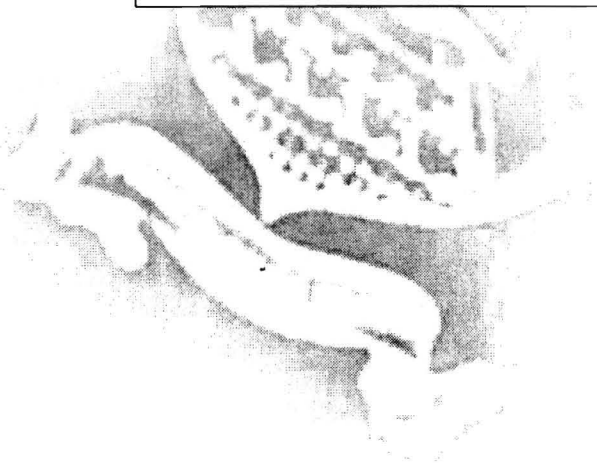




**National University of Science and Technology**  
**Zimbabwe**

**PRODUCTION OF A NUTRITIOUS NON-ALCOHOLIC  
FRUIT JUICE AND DETERMINING ITS SHELF LIFE**



**IYLIT SHERENI**

**N990121P**

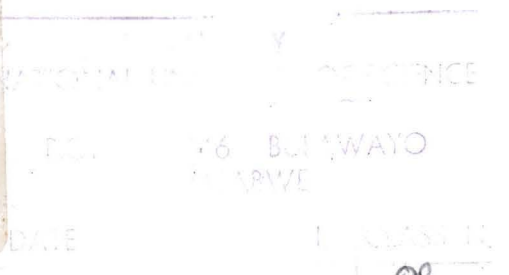
**B.Sc. HONS APPLIED BIOLOGY AND BIOCHEMISTRY**

PROJECT SUBMITTED TO THE DEPARTMENT OF APPLIED BIOLOGY AND  
BIOCHEMISTRY IN THE FACULTY OF APPLIED SCIENCES IN PARTIAL FUFILMENT OF A  
Bachelor of Science HONOURS DEGREE IN APPLIED BIOLOGY AND BIOCHEMISTRY.



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## ABSTRACT

The processing and storage effects on Vitamin C content, Brix value, Total Titratable Acidity (TTA), Browning index and sensory score of Marula juice extracted from fruits originating from eight different areas around Bulawayo was determined. Since Vitamin C is quite unstable, its loss was used as an index of overall quality in processed and stored Marula juice. It was assayed by visual titration method using the redox dye 2,6-Dichlorophenolindophenol. The degree of Vitamin C degradation increased with increasing processing temperatures. Changes during storage were noticeable at ambient temperature and were more pronounced with increase in headspace. There was a sharp decrease in Vitamin C levels in the first two weeks of storage followed by a period of slow loss indicating that two simultaneous reactions with different rates were responsible for the degradation and that Marula juice was not stable at 25°C. There was no significant change in juice stored at 5°C. A decrease in Vitamin C corresponded to an increase in Browning index and a decrease in sensory score suggesting that the non-enzymatic browning of the juice was a result of Vitamin C degradation. Browning index was determined by measuring the absorbance of the brown pigments at 420nm. Juice with a Brix value of 13<sup>o</sup> measured by a refractometer and a TTA of 0.1% assayed by titrating with 0.1N NaOH solution was found to have the highest sensory score.