

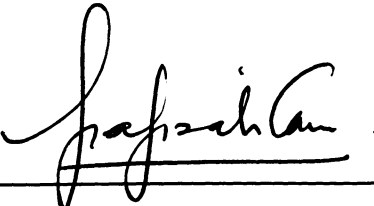
**THE COMPARATIVE STUDY ON BIOCHEMICAL
CHANGES OF *Arenga pinnata* SAP AND IT'S
FERMENTATION.**

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**Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Biology
in The Faculty of Applied Sciences
Universiti Teknologi Mara**

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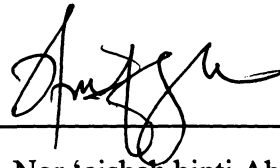
This Final Year Project Report entitled “**The Comparative Study On Biochemical Changes Of *Arenga pinnata* Sap And It’s Fermentation**” was submitted by Nurul Nadiah Binti Masrialah, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by



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ABSTRACT

THE COMPARATIVE STUDY ON BIOCHEMICAL CHANGES OF *Arenga pinnata* SAP AND IT'S FERMENTATION.

The production of palm toddy and palm vinegar could happened with alcoholic and acetic acid fermentation of *Arenga pinnata* sap respectively. This study aimed to determine the biochemical changes that happened during 7 days of anaerobic fermentation then another 3 weeks of aerobic fermentation. Based on the proximate analysis results, differences in chemical compositions among fresh palm sap, palm toddy and vinegar were observed. It was found that, throughout the fermentation, the decreasing of pH value as 5.87 until 3.67 and glucose concentration decreased as 74.1mg/L (0.007%) to 6.612mg/L (0.001%). The increasing of ethanol concentration was observed increased in alcohol fermentation process and decreased in acetic acid fermentation as 5500 mg/L (0.55%), 21400 mg/L (2.14%), 140100 mg/L (14.01%), 64000mg/L (6.40%) and 22800 mg/L (2.24%). The presence of acetic acid production was detected in day 15 and increased to 3000 mg/L (0.3%) and 10600 mg/L (1.06%) respectively for day 21 and day 28. Based on these biochemical changes, it has been observed that there were some microorganisms that played role in this fermentation.