



**EFFECT OF DIFFERENT DRYING METHOD ON ANTIOXIDANT  
CAPACITY AND TOTAL FLAVONOID CONTENTS OF *Artocarpus  
heterophyllus* LAM. (JACKFRUIT) LEAF EXTRACT**

**By**

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**Thesis Submitted in Partial Fulfillment for the Degree of Bachelor of  
Medical Laboratory Technology (Hons), Faculty of Health Sciences,  
Universiti Teknologi MARA**

**2015**

## **AUTHOR'S DECLARATION**

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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## ABSTRACT

### **EFFECT OF DIFFERENT DRYING METHOD ON ANTIOXIDANT CAPACITY AND TOTAL FLAVONOID CONTENTS OF *Artocarpus heterophyllus* LAM. (JACKFRUIT) LEAF EXTRACT.**

*Artocarpus* spp was identified to have numerous biological activity through an in vitro and in vivo pharmacological studies and these elucidated by the phenolic compounds such as flavonoids, stilbenoids, arylbenzofurans that present in different of plant parts. Mainly in the actual studies and reviews on the antioxidant capability of natural product focus more on the characteristics of the measurement procedure for instance free radical generating system, redox process and hydrophilic solubility. Nevertheless, the vital steps such as preparation of sample or the procedure for extraction of antioxidants compound were not concentrated critically. Thus far, less attention in systematic analysis of the effects of different drying methods on the total flavonoid content and antioxidant activity of *Artocarpus heterophyllus* Lam (jackfruit) leaf extract. This study is aim to determine the effects of different drying methods on the phenolic and flavonoid content and the antioxidant capacity of *Artocarpus heterophyllus* Lam (jackfruit) leaf aqueous and ethanolic extract. Jackfruit leaves were subjected to three different drying methods such as, sun drying, oven drying and air drying. The weight loss of the oven-dried, sun-dried and air-dried samples will be recorded at time intervals and the drying experiments will be conducted in triplicate. Drying process were be stop when no significant changes in three consecutive weight. 10% aqueous and 70% ethanol extraction was chosen in these experiments to obtain a crude extract of freeze dry powder and dark-green viscous mass crude extract from rotary evaporation. Analysis of total phenolic and flavonoid contents as well as its antioxidant capacity and ferric reducing power of jackfruit leaf extract were then determined. The total phenolic content (TPC) of ethanolic and aqueous extracts was significantly different as affected by different drying treatments, with air dried and oven dried produce slightly decrease in TPC and antioxidant activity as demonstrated by the reduction in both free radical scavenging activity of DPPH and lowering the FRAP values. Oven dried extract causing the highest decrease in TPC and antioxidant activity. However, sun dried jackfruit leaves extracts possessed a high TPC and antioxidant activity compared to the air and oven drying hence suggesting that sun dried methods is the most preferable method for processing *Artocarpus heterophyllus* Lam (jackfruit) leaves in order to preserve the antioxidant properties, phenolic content as well as total flavonoids content.

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