

**THE EFFECT OF PRETREATMENT WITH
Melastoma malabathricum LEAVES TOWARDS THE
BITTERNESS OF *Carica papaya* SHOOTS AND THEIR
PHYTOCHEMICAL PROPERTIES**

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This Final Year Project Report entitled “**The Effect of Pretreatment with *Melastoma malabathricum* Leaves Towards The Bitterness of *Carica papaya* Shoots and Their Phytochemical Properties**” was submitted by Azian Hazirah binti Anuar, in partial fulfilment 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 EFFECT OF PRETREATMENT WITH *Melastoma malabathricum* LEAVES TOWARDS THE BITTERNESS OF *Carica papaya* SHOOTS AND THEIR PHYTOCHEMICAL PROPERTIES

The papaya (*Carica papaya*) belongs to the Caricaceae family and has become one of the most important tropical crops consumed worldwide. Despite the sweetness of the papaya fruit, papaya shoots and leaves are bitter. Papaya shoots and leaves are traditionally used to treat various diseases such as dengue fever, malaria, diarrhea and chikungunya. Various measures have been taken to mitigate the bitter taste of papaya shoots, such as by soaked in a salt solution before cooking, but these methods still leave a bitter taste in the mouth. The leaves of *Melastoma malabathricum* (senduduk) are traditionally used to eliminate the bitter taste of many edible bitter plants by a traditional method, which is by boiling method. The main objective of this study is to investigate the effect of pretreatment of *M. malabathricum* (senduduk) leaves towards the bitterness level of *C. papaya* shoots through sensory evaluation study. In addition, the phytochemical constituents in *C. papaya* shoots with and without pretreatment with *M. malabathricum* leaves will be analyzed. In this study, fresh papaya shoots were pre-treated with different amounts of senduduk leaves (0, 2, 5, 10, 20, and 25 g). The phytochemical studies showed that total phenols and saponins content in pre-treated papaya shoots decreased after treatment with senduduk leaves, especially in papaya shoots treated with 10, 20, and 25 g of senduduk leaves. These results suggest a successful removal of all phenolic compounds and saponins in papaya shoots. These also affected the color intensity of papaya shoots extracted based on the presence and absence of phenolic compounds or saponins. Sensory analysis showed that papaya shoots treated with 5 g of senduduk leaves could reduce the bitter taste of papaya shoots, while the bitterness of fresh papaya shoots was extremely intense. On other hand, the bitterness of papaya shoots was successfully reduced by senduduk leaves by using the boiling method. Further research is needed to investigate the quantity of bioactive compounds of papaya shoots and senduduk leaves after treatment.