UNIVERSITI TEKNOLOGI MARA

THE PHYTOCHEMICAL ASPECT OF THE STEM AND LEAVES EXTRACT OF *SYZYGIUM* SPECIES

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ABSTRACT

This research deals with the study on *Syzygium* species. The *Syzygium* species has been used as source of medicines by ancient people. One of *Syzygium* species that contributes to medicinal practices is *Syzygium cumini*. Due to the lacking information and references on *Syzygium cumini*, the benefit provided by the plant is still much unknown among the local people in Malaysia. Due to those reasons, the extractions of the leaf and stem of *Syzygium cumini* were performed. Furthermore, various methods were performed in the process of discovering the compound from the leaf and stem of this plant. Such methods include Thin Layer Chromatography (TLC) and phytochemical screening in identifying the important chemicals such as alkaloids, saponins, steroids and terpenoids. From these methods, it is expected that alkaloids and terpenoid can be found in the leaves extracts. The therapeutic importance and spectroscopic data from this phytochemicals were then documented. In a nutshell, the isolated compounds from this study were possibly the alkaloids and terpenoids. The spectroscopic data of the terpenoid that was managed to be isolated was comparable with the signals of β- sitosterol.

CHAPTER 1

INTRODUCTION

1.1: Introduction to *Syzygium* species and *Syzygium cumini*

Natural products such as plant and animal have contributed in supplying the source for use in pharmaceutical drug discovery and drug design. Natural products were enables to supply for the source because the natural sources have various pharmacological and biological activities that are useful in that pharmaceutical field. Among various natural products, plants are widely used. Many plants are used in traditional medicines because plants produce a diverse range of bioactive molecule, which automatically making them as a rich source of different types of medicines. In addition, as the time goes on, the traditional medicines used, are later converted to many common drugs prescribed in clinical practice in modern days. Furthermore, herbs and herbal products are still an important part of the primary health care system in many parts of the world.

One of the herbal plants that contribute to health care system is *Syzygium*. *Syzygium* according to Craven (2004) is the largest genus of Myrtaceae in Malesia with between 500 and 1000 species. Meanwhile, the full range of the genus is from Africa east to the Hawaiian Islands and from India-southern China goes to south to New Zealand. Many species of *Syzygium* are utilised as timber trees, cloves and cottage fruit trees. According to Craven (2004) the genus has wide-ranging local medicinal uses such as a local anaesthetic to treat syphilis. Meanwhile, *Syzygium* also