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THE TRADITIONAL USES AND THE CHLOROFORM EXTRACTION OF *SYZYGIUM* SPECIES

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TABLE OF CONTENTS

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ABSTRACT

Medicinal plants have secured the attention of many researchers from local and overseas. A clear border is still not easy to determine between modern and traditional medicine. In solid fact, modern medicine derives from the traditional use of herbal remedies. One example among many of them is the *Syzygium cumini*. On the other hand, there is still very active investigation of traditional pharmacopoeias in order to find new substances to add to the pharmaceutical arsenal. In this study, the traditional uses of *Syzygium cumini* plant were reviewed by collecting the scientific data from various sources. From the literatures, it was found that the major use of this plant is to treat diabetes. A further study was done by characterizing the constituents from the chloroform extract of the leaves from this plant. The extract was introduced to the Thin Layer Chromatography (TLC) and observed under the ultraviolet (UV) light. A few spots could be observed on the silica gel plate which indicated the presence of some compounds. The isolation of compound via preparative TLC was performed prior to the spectroscopic study. The chemical shifts obtained from the ^{1}H-NMR spectrum were analysed to clarify the chemical composition from the leaves. It was found that the compound purify most likely to be a triterpene. Finally, it was suggested that the compound could be a derivative of stigmasterol.

CHAPTER 1

INTRODUCTION

1.1 Background of *Syzygium* species

Plants have many uses in medical and pharmaceutical career. It is due to the natural compound that can be extracted from every single part of the plants that is believed to contain less harmful or toxic substance compared to the synthetic one. The beneficial uses of medicinal plants in traditional system of medicine of many cultures are extensively documented. Several plants have been used as dietary adjuvant and in treating the number of diseases even without any knowledge on their proper functions and constituents. Medicinal foods are prescribed widely even when their biologically active compounds are unknown, because of their safety, effectiveness, and availability (Patel *et al.*, 2012). In India herbal medicines have been the bases of treatment and cure for various diseases in traditional methods practiced (Jadhav *et al.*, 2009).

Syzygium is a genus from the family Myrtaceae (Baliga *et al.*, 2011) and the Myrtaceae family comprises an estimated 5500 species of trees, distributed in tropical to temperate environments across both hemispheres (Thornhill and Macphail, 2012; **Table 1.1**). Historically, the Myrtaceae have been subdivided into two subfamilies which are the Myrtoideae, characterized by fleshy fruits and opposite, entire leaves, and the Leptospermoideae, characterized by dry,