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TITLE:

**PREPARATION OF HONEY EFFERVESCENT
TABLET FROM PROCESSED STINGLESS BEE'S
HONEY**

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ABSTRACT

Stingless bees are a small bee from the species of *Trigona* or *Meliponine* and known as *Kelulut* bee in Malaysia is the type of honey that has a high medicinal beneficial than other bee species which had alleged by the traditional medical practitioner. Furthermore, stingless bees are easier to handle compared to honey bees that are often lost, always abandon their hive, and are vulnerable to disease. The main purpose of this study to formulate and prepare an effervescent tablet containing extracts of process honey and to perform the study of effervescence time, pH, and solubility of the prepared tablet. The effect on pH, refractive index, moisture content and hygroscopicity at various temperature levels (40°C, 60°C, 80 °C) for 30 minutes were evaluated using the analyse of heating treatment. Based on the result, heating process at 60°C is the optimal temperature for process honey. After that, for effervescent tablet, the physical properties such as pH, effervescent time and solubility were being tested at 3 different formulation. The result shows that the formulation is the second formulation.

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CHAPTER ONE BACKGROUND

1.1 Introduction

Honey is a natural food derived from honeybee and most commonly used as a sweetener. Besides, honey also is known for its remedial value (Chan-Rodríguez et al., 2012) . The colour of

the honey is usually clearer, liquid and has a sweet and sour taste (Roowi et al., 2012). Honey is a highly concentrated solution containing a complex variety of sugars, from a chemical standpoint. Its composition is highly dependent on the plant species from which the nectar or honeydew was collected, as well as other variables, including environmental circumstances and climate. Apart from sugars, it contains also several phenolic substances such as the flavonoids and phenolic acids. Given their role as antioxidants, several methods for their analysis have been developed in recent years. Analysis of phenolic compounds has been regarded also as a very promising way of studying floral and geographical origins of the honeys (analysis of phenolic acids in honeys of different floral origin, 2006)

Stingless bees is a small bee from the species of *Trigona* or *Meliponine* and also known as *Kelulut* bee in Malaysia is the type of honey that has a high medicinal beneficial than other bee species which had alleged by the traditional medical practitioner (Biswa et al., 2017). Furthermore, stingless bees are easier to handle compared to honey bees that are often lost, always abandon their hive, and are vulnerable to disease (Abd Jalil et al., 2017) Likewise, stingless bee honey is unique as it originates from the rich vegetation in native environments. It has a distinctive sweetness mixed with a sour and acidic taste. In contrast to the stingless bee population, the distribution of this honey is lower compared to that of the common honeybee. This is due to the limited knowledge about this honey, which has resulted in it being less popular in terms of its industrial production, shelf life, and quality standard .

Processed honey is one of the treatments that apply heat to the honey. Heating treatment has been introduced in processes honey due to tendency of honey to crystallise (Subramanian et al., 2007) Heating can prevent the crystallization for occurs, destroys the microorganisms, and reducing the moisture content that can spoil the honey. It can enhance the shelf life of honey. Heating treatment also help in retaining honey's nutritional value and antioxidant level without destroy it ((Ramlan et al., 2021).

Oral drug delivery has been known for decades as the most widely utilized route of administered among all the routes that have been employed for the systemic delivery of drug via various pharmaceutical products of different dosage forms. The reasons that the oral route achieved such popularity may be in part attributed to its ease of administration (Gharti et al., 2012) . Effervescent tablets are becoming increasingly popular in a variety of sectors including supplements and pharmaceutical use due to the ease in which they can be consumed. Effervescent tablets are designed to break in contact with liquid such as water or juice, often causing the tablet to dissolve into a solution (Agyilirah ' et al., n.d.).