

UNIVERSITI TEKNOLOGI MARA

**PREPARATION AND EVALUATION PALM OIL BASED CREAM
CONTAINING ANTI BACTERIAL PROPERTIES OF MELASTOMA
MALABATHRICUM LINN**

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ABSTRACT

The purpose of this study was to develop a physically stable emulsion with palm oil as the oil phase and incorporated with *Melastoma malabathricum* Linn flower extract. *M. malabathricum* L is a common shrub that can be found in roadside along Malaysia and Indonesia. *M. malabathricum* L is widely used in traditional medicine especially among Malaysian. Flower extract of *Melastoma malabathricum* contain kaempferol-3-O-(2",6"-di-O-p-trans-coumaroyl) glucoside which have been shown to exert antibacterial and anti-inflammatory properties. In this study, several cream formulations are formulated to produce most stable cream with incorporation of this flower extract. The flower extract was obtained by extraction with methanol as a solvent and by using non-reflux method. The stability, particles size, particle size distribution, pH and viscosity of all cream formulation were tested and were compared in between different formulation and in between similar formulation with and without extract incorporation. All formulation used the same excipients with different ratios. Palm oil and cetyl alcohol was the main constituent of oil phase, stearic acid as surfactant, cetrimide as preservatives and distilled water as vehicle. All formulations were made to achieve skin pH that is 5.5. Each formulation produced different physicochemical properties. Formulation of blank creams shows higher uniformity of particle size than creams with extract incorporations. Blank formulation will also have higher viscosity and behave more elastically then creams with extract incorporations. Formulations 5 that have lower water content and with extract incorporation shown to have most stable dispersion system as it produces separation of 0mm/year after tested with Lumifuge dispersion analyzer.

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Melastoma Malabathricum Linn is a very common herb or shrub found throughout the tropic in the moist part mostly from India, Thailand and Malaysia, where it grows as small trees 12-13 feet high, occasionally even up to 20 feet (Susanti, Sirat, Ahmad, & Ali, 2008). This small shrub belongs to the family *Melastomaceae* and is native to topical and temperate Asia, including Malaysia and the Pacific Island (Siti Syariah Mamat et al., 2013). This species has at least three varieties that is large, medium and small size flower with dark purple-magenta petals, light pink-magenta petals and the rare variety white petals. *M. malabathricum L* is a shrub that comes with beautiful flowers and has berries-like fruits rich in anthocyanins. (Nurhadis Che Omar, Abdullah, Khairoji, Chin, & Hamid, 2013)

M. malabathricum L is widely used in traditional medicine especially among Malaysian. One of the medicinal plants that have been widely used in Malay traditional medicine is *M. malabathricum L*, which is locally known as “senduduk” (Siti Syariah Mamat et al., 2013). Traditionally, *M. malabathricum L* is consumed orally to control blood sugar level and maintain normal blood pressure. Recent studies in 2013 shows that *M. malabathricum L* has the ability to reduce blood