

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT AND EFFICACY STUDIES OF
PALM OIL CONTAINING AQUEOUS CREAM**

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Dissertation submitted in partial fulfilment of the
requirements for the Bachelor of Pharmacy (Hons.)

Faculty of Pharmacy

Jun 2016

ACKNOWLEDGEMENT

Alhamdulillah, all praise be to Allah S.W.T, the Most Merciful and the Most Gracious. With His blessings, after an intensive period of two semesters this project has been completed successfully. All the challenges during the writing this project has been a great experience and had a big impact on me as a student.

Foremost, I would like to reflect on the people who have always support and help me throughout this period. I would like to express my sincere gratitude to my supervisor, Dr. Shariza Sahudin for her continuous encouragement, motivation and guidance in order to make sure I completed my research project on time. In addition, my deepest gratitude to the Faculty of Pharmacy UiTM for giving me the opportunity to do this study.

My precious thanks to the fellow lab assistances for the valuable guidance and willingness to help me. Also, I would like to thank my friends for their passionate participation and excellent cooperation in doing the laboratory work during this project. Last but not least, I must express my very profound gratitude to my family especially my parents for providing me with unfailing support throughout my years of study. This accomplishment would not have been possible without them.

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ABSTRACT

Moisturisers are most commonly used in patients with eczema and dry skin as it helps to sustain the skin integrity and hydration. The moisturiser preferred is aqueous cream where the oil phase increases occlusion and water phase provides moisture and allows skin flexibility. In this study, aqueous creams containing palm oil is expected to improve the skin hydration due to high amount of tocopherol and tocotrienol. Formulations containing palm oil and liquid paraffin were produced and physically characterized using LumiFuge (Stability), Mastersizer (Particle size), texture analysis and pH meter. Efficacy studies were conducted using Corneometer (Capacitance) and Tewameter (TEWL) which were analysed using IBM SPSS Statistical software to determine the significant difference between the various formulations. The creams were also compared to commercial aqueous creams. The results have shown that, aqueous creams containing 13% and 12% palm oil gave significantly higher hydration compared to CCM aqueous cream. Aqueous cream containing 10% palm oil however, showed significant reduction in TEWL compared to aqueous cream from CCM.

CHAPTER 1

INTRODUCTION

1.1 Background of study

Skin is the organ in the integumentary system that have several layers which are epidermis, dermis and subcutaneous layer. Epidermis which is the stratified skin layer is further divided into four layers which are the stratum corneum (SC), stratum spinosum (SS), stratum granulosum (SG) and stratum basale (SB). SC is the top most layer thus, it is a vital membrane keeping the internal environment of the body safe from unwanted influences (microbes and the elements) due to the surrounding environment. Besides that, this layer will act as a waterproof barrier and keep the skin hydrates due to the brick and mortar architecture of SC (Gopinathan K. Menon, 2002).

Moisturisers are one of the most commonly used skin care especially in patient with xerosis or known as dry skin. The types of moisturisers preferred in patient with dry skin is aqueous cream as it provides moisture which will allow the skin to become more flexible and prevent itching (M. Tsang and R.H. Guy, 2010). One of the common problems in eczema is dry skin especially among children thus, moisturisers are the backbone of the treatment (M Loden, 2005).