UNIVERSITI TEKNOLOGI MARA

THE EFFECTS OF NATURAL EMOLLIENT OILY GEL APPLICATION ON BIOPHYSICAL SKIN PARAMETERS

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TABLE OF CONTENTS

Page

ABSTRACT

Biophysical skin parameters are indicators of the skin condition. Moreover, it is useful to evaluate the performance and effectiveness of skin products. This 8 week study evaluated the effects of natural emollient oily gel (NEOG) on skin moisture (stratum corneum hydration), transepidermal water loss (TEWL), skin topography and skin biomechanical properties. Human volunteers were divided into two groups, one group received NEOG product, and another group received placebo product and they were applied given products on forearms in 8 weeks. The measurements were done before, after 4 weeks and 8 weeks of products application. There were significantly differences in NEOG group compared to placebo for most of the measured parameters. Skin moisture and skin topography parameters which were skin roughness and skin wrinkles had significantly improved. However, there were no significant differences on TEWL and skin biomechanical properties although the data demonstrated that there were some improving measurements in those properties. So, NEOG is effective in improving certain skin biophysical parameters and a good choice of skin product for treatment of skin condition associated with the dry skin as well as promoting the skin health.

CHAPTER 1

INTRODUCTION

1.1 Background and Statement of Problem

Emollient can be defined as an agent that softens or soothes the skin. Emollient can restore the integrity of epidermal barrier function of the skin (Clark and Hoare, 2001). It is used to help reducing the dry skin and improving the condition either by direct interaction with the stratum corneum (SC), which is the outer layer of the skin epidermis or by providing an occlusive barrier that traps water on underlying skin layer from evaporated out. Historically, the first commercial emollient used widely by the industry was lanolin. It was a well-known ingredient used by apothecaries from the 1920s to the early 1960s. As an emollient, lanolin provides good occlusive effect when applied to skin and may also directly increase the integrity of SC.

Natural emollient is one of the emollient classes that derived from the original source such as animal fats or vegetable oils which is triglycerides. Triglycerides oils contain approximately 5% essential fatty acids (EFAs). EFAs are unsaturated fatty acids that cannot be synthesized by the body, so it is required from outside to maintain the SC barrier function. The natural oils are usually more acceptable by the customers because of the lower incident of allergic reactions provided by the natural origin substances. The emollient products include creams, emulsions, gels, ointments, lotions which can be

1