

**UNIVERSITI TEKNOLOGI MARA**

**FORMULATION AND CHARACTERIZATION OF  
COSMETIC CREAMS CONTAINING OLIWAX AND  
OLIWAX LC**

**NUR QATRUNNADA BT MOHD SUKHAIRI**

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## ABSTRACT

Creams are emulsions comprised of water-in-oil emulsion (W/O) and oil-in-water emulsion (O/W). Oil phase can be butter and oils. Cocoa butter, Oliwax LC and Oliwax have been used to produce butter body cream . Oliwax LC (Cetyl Palmitate, Sorbitan Palmitate, Sorbitan Olivatate) is a stabilizing agent and liquid crystal promoter whereas Oliwax (Hydrogenated Olive Oil) is the ideal ingredient to enhance the stability of the oily phase of the emulsions. In this study, we analyse the rheology, texture, droplet size distribution, droplet surface charge and sensory profile. The formulations were characterized by using rheometer, texture analyser, mastersizer, zetasizer and sensory profile. The preparation of emulsion consisted of oily phase was dispersed in aqueous phase (O/W emulsion). Cetostearyl alcohol gave viscosity to the cream whereas Sensolene gave the moisture properties of body cream. The rheology study would analyse Storage Modulus ( $G'$ ), Loss Modulus ( $G''$ ) and complex viscosity. From the results, Oliwax showed the higher value of viscosity as compared to the Oliwax LC. For texture analysis, Oliwax showed good texture during spreadability and back extrusion method. In addition, Oliwax also showed good droplet surface charge which is -30.3 mV. On the contrary, Oliwax LC which is F2 containing smallest droplet size distribution which is 12.464  $\mu\text{m}$ . Based on the sensory profile results, formulations containing Oliwax are more preferable for evaluators since Oliwax LC showed higher firmness of the body cream during spreading onto their skin. In conclusion, Oliwax which is F10 shows good results on rheology, texture and droplet surface charge whereas Oliwax LC which is F2 shows smallest droplet size distribution. Most of panels preferred Oliwax which is F8 as the best texture of butter body cream.

## **1.0 CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of Study**

Cosmetics are substances used to improve, protect and beautify the appearance or odor of human body. The U.S. Food and Drug Administration (FDA) defines cosmetics as intended to be applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body's structure or functions. This wide definition includes any material intended for use as a component of a cosmetic product and the FDA specifically excludes soap from this category (Hein et al., 2009).

An emulsion is a mixture of two or more liquid mixed together and also defined as a dispersion of droplets of one liquid in another and being immiscible (Dickinson & Stainsby, 1982). Accordingly, the droplets of the inner phase tend to cluster together spontaneously, forming small or large flocs which is flocculation, to coalesce giving larger spherical droplets and to cream, leading to a layer of the lower density phase on top of the emulsion (McClements, 1999). Long-term stability of a dispersed system shows that the rate and extent of changes in emulsion structure is adequately decrease in real time. The long-term stability of beverage emulsions is usually widen by adding a variety of stabilizers