

**UNIVERSITI TEKNOLOGI MARA**

**STABILITY OF RED, BLUE AND PURPLE  
EXTRACTED FROM FRUITS ON LIP BALM**

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## **ABSTRACT**

The advantages of using natural colorant are the main reason to increasing in demand of natural colorant to replace synthetic dyes especially in cosmetic industry. However, it is difficult to produce natural colorant due to the limitation of raw materials availability. Hence, this research tried to customize the properties of lip balm by using natural dyes from pigment that exist in the waste of fruits which is its skin. The stability of the natural colorant on lip balm including their chemical, physical and biological properties was studied in this research and was compared with the synthetic lip balm in market. From the finding, it can be conclude that the formulation of lip balm were stable at room and refrigerant condition, however it the color and shape of lip balm start to change under oven condition. UV light and the heat generated from the light bulb also cause the photodegradation of pigment.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Research Background**

Colour is one of the most important properties in life as it has been used widely in various sectors such as for food coloring, paints, textiles industries, papers, pharmaceutical or even cosmetics. In 2600 BC, natural dyes were used for the first time for dyeing textile in China(Rubia ; Aman Bhardwaj;, 2016). During the civilization of Indus valley, people used natural colorant for wall decoration and painting in cave, while civilization in Egypt used natural dyed clothes to wrap mummies(Rubia ; Aman Bhardwaj;, 2016). Henna that is used to colour hairs was also as old as 2500 BC(Rubia ; Aman Bhardwaj;, 2016).

After inventions of synthetic dyes, usage of natural dyes have showing a sudden decrement because of the advantage of synthetic dye over natural dye in respect of application, colour range, fastness properties, and availability. However, most of the synthetic colorants are hazardous to human health and environment. Similarly, during the Hindu festivals of colours, Holi, doctors also warn people to avoid cheap synthetic colours which are toxic because it could result in any unwanted diseases from skin allergies to cancer, eye irritation and blindness(Vijetha, Nadh, Naidu, & Sundari, 2017).

As people become more aware on the negative effect of using synthetic dyes, hence extracted dyes from natural resources; mostly plants are becoming important alternatives as colorant. Natural dyes have been studied for their superiority which are more biodegradable, non-toxic and generally have higher compatibility towards the environment as compared to the synthetic dyes(Taif, 2015). As a result, demand on the natural dyes especially for food and cosmetics colorant industries have been increasing for these past years.