

UNIVERSITI TEKNOLOGI MARA

**A STUDY ON THE EXTRACTION
AND STABILITY OF ORANGE AND
YELLOW PIGMENT FROM DAUCUS
CAROTA SUBSP. SATIVUS AND
CURCUMA LONGA FOR FOOD
COLOURING**

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ABSTRACT

This paper was an experimental project where it was done to extract of yellow and orange pigment from carrot and turmeric by using supercritical fluid extraction and hydro-distillations and also to investigate the effect of natural and synthetic colour on different condition of storage, temperature, light, toxicity and food products. The extraction by using hydro-distillation is chosen because the amount of colorants is higher using hydro-distillation. A few tests had been discovered to know the stability of natural colorants and compared with the synthetic ones. From the tests, the absorbance values were obtained. The value of absorbance use to compared between the natural colorants and synthetic colorants. The stability of the orange pigment is affected due to the caretenoids contained and yellow pigment is affected due to the curcuminoid contained in both colorants respectively. Both caretenoids and curcuminoids are affected by the UV light and temperature.. In term of toxicity, the concentration of elements and heavy metals in the natural orange and yellow pigments were lower than the synthetic ones. Natural colorants were safer than synthetic colorants for human consumptions in their daily lives. The study suggested that both orange and yellow pigments are well kept in the dark and suitable temperature condition to keep the pigment from color loss.

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CHAPTER ONE

INTRODUCTION

1.1 Research Background

Colorants are utilized as a part of nourishment to influence it to feel all the more appealing and appetizing, which are vital variables while picking nourishment off the racks. The colorants are utilized to upgrade existing hues that can be lost either amid the produce or over the time span of usability, or even to credit new ones to it. Food colors can be characterized into three gatherings; characteristic food colorants, which allude to ones that are incorporated normally; nature-indistinguishable colorants, which despite the fact that orchestrated in ventures, emulate the regular ones lastly the counterfeit/manufactured colorants (Msagati, 2013).

In a focused worldwide market, the slightest costly technique for food conservation is constantly supported, and by and large, food added substances are picked over the others. Besides, food added substances are basic to empower the food business to influence food to meet the inexorably difficult market and lawful requests (Saltmarsh et al., 2013). Food added substances could be partitioned into 6 gatherings of particles which are additives, nourishing added substances, shading operators, enhancing specialists, texturizing specialists and various operators (M. Carocho et al., 2015). In this research, we are focusing on the coloring agents properties.