

**EFFECT OF COPPER (II) AND CHROMIUM (VI) ON CRUDE EXTRACT
OF *ERYTHRINA CRISTA-GALLI* AND *IXORA JAVANICA* FLOWERS:
SPECTROMETRIC STUDIES**

MAZHAMIZA BT RIDZUAN

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ABSTRACT

EFFECT OF COPPER (II) AND CHROMIUM (VI) ON CRUDE EXTRACT OF *ERYTHRINA CRYSTA-GALLI* AND *IXORA JAVANICA* FLOWERS: SPECTROMETRIC STUDIES

Erythrina Crysta-Galli and *Ixora Javanica* flowers were chosen in these spectrometric studies. Extraction of natural pigments was performed in acidified water at different temperature (50 to 100°C). The crude extract was analyzed using ultraviolet visible spectrophotometer over the range of 400 nm to 650 nm. Maximum absorbance of *Erythrina Crysta-Galli* and *Ixora Javanica* crude extract was obtained at extraction temperature 100°C (1.246) at 511.08 nm and 60°C(1.214) at 513.10 nm respectively. The interaction of Cr(VI) and Cu(II) with crude extract at different concentration was studied. When the concentration of Cr(VI) increased, the absorbance of mixture increases. But, there are no changes in maximum absorbance when the concentration of Cu(II) increased. The maximum absorbance was shifted to shorter wavelength when Cr(VI) ion was added to crude extract of both flowers. When Cu(II) was added into the crude extract, hypsochromic shift was observed for *Ixora Javanica* and bathochromic shift for *Erythrina Crysta-Galli*. The crude extract of natural pigment was also applied to silk fabric. Different shades of color on silk fabrics were obtained when the cation solution mixed with crude extract of each flowers.

CHAPTER 1

INTRODUCTION

1.1 Background and problem statement.

Erythrina Crysta-Galli - easily distinguished from the others by its flowering much of the year. *Erythrina Crysta-Galli* is a species that comes from the family of Fabaceae. Fabaceae or Leguminosae is a large and economically important family of flowering plants, which is commonly known as the legume family, pea family, bean family or pulse family and distributed in tropical and subtropical regions worldwide. There are about 130 species. The local name for the tree is Dedap. The tree is a flowering medium-sized tree which growing to a height of 5-8 meters. The trunk is woody with irregular spiny branches. While the leaves are three leaflets, smooth, alternate that up to 6 cm long. The leaflets are dark green, elliptic (widest toward the middle) and acute with entire margins. Then, the flower is in dark red color, papilionate with petals 5 cm long and separate stamens about 1 cm long. *Erythrina Crysta-Galli* is rich with source of fodder and medicinally important natural pigment (Whistler and Elevitch, 2006).