DETERMINATION OF THE STABILITY OF ANTHOCYANINS EXTRACTS FROM *Plumeria rubra*

NADIA BINTI MOHAMED YUSOFF

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ABSTRACT

DETERMINATION OF THE STABILITY OF ANTHOCYANINS EXTRACTS FROM *Plumeria rubra* FLOWER

Nowadays, natural dyes have been used widely in many sectors such as food industry. An intensive research also have been conducted to replace synthetic dyes with natural dyes as sensitizer for dye-sensitized solar cell (DSSC) as it is more economical and environmental friendly than synthetic dyes. However, it becomes a problem as natural dyes are less stable than synthetic dyes. This study was carried out to determine the optimal conditions for anthocyanins extraction from *Plumeria rubra* flower by using different extraction solvents, time and extraction temperatures. The light stability of *Plumeria rubra* flower extract was also investigated. The anthocyanin in *Plumeria rubra* was extracted by using simple extraction method. At various temperatures of 30, 35, 40, 45 and 50 °C, the anthocyanins concentration were found to be in the range of 0.5360 to 0.6178 mg L^{-1} in 95% ethanol solvent and 0.3044 to 0.6587 mg L^{-1} in water solvent. The total content of anthocyanins extracted at 40 °C using 95% ethanol solvent increased from 0.09086 to 0.79952 mg L^{-1} in the range of 2 to 24 hours extraction time. The optimum extraction condition of anthocyanins from *Plumeria rubra* was in 95% ethanol at 40 °C for 24 hours for extraction solvent, temperature and time respectively. The extraction efficiency under the optimum conditions was 0.79952 mg L^{-1}. The degradation of anthocyanins pigment increased up to 72.65% as the exposure time increased from 0 to 24 hours. The stability of anthocyanins extract was significantly affected by the presence of UV light.