

**OPTIMIZATION OF EXTRACTION TIME, TEMPERATURE, pH
AND STABILITY ON LIGHT OF ROSELLE (*Hibiscus sabdariffa* L.)**

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Partial Fulfillment of the Requirements for the
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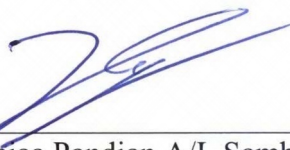
This Final Year Project entitled **“Optimization of Extraction Time, Temperature, pH and Stability on light of Roselle (*Hibiscus sabdariffa* L.)”** was submitted by Nur Afiqah Binti Zulkifli, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Chemistry, in the Faculty of Applied Sciences, and was approved by



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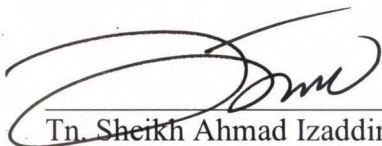
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ABSTRACT

OPTIMIZATION OF EXTRACTION TIME, TEMPERATURE, pH, AND STABILITY ON LIGHT OF ROSELLE (*Hibiscus sabdariffa* L.)

The extracted roselle was characterized by brilliant red colour that rich in anthocyanin and can be used as a natural food colorants. There are many factors that influenced the stability of anthocyanin such as extraction time, temperature, pH and stability on light. The extraction of pigments were carried out by using acidified ethanol with 1.5 M HCl. The crude extraction of roselle was analysed and characterized using FTIR and UV-Vis spectrophotometer. The optimization of extraction time and temperature was studied at range from 1 to 5 hours and 25 °C to 140 °C respectively. The effect of pH on the anthocyanin content was studied at ranged from pH 1.5 to pH 12.0. Control and optimized sample were put under the light at 8 hours per day for 4 days to determine the stability on light. The results indicated that the optimum extraction time, temperature, and pH were 3 hours, 100 °C, and pH 1.5 respectively. The optimized sample exhibit the highest anthocyanin content for all 4 days compare to control. Overall, the highest total anthocyanin content was found to be 348 mgL⁻¹ at optimum condition.