DETERMINATION OF CREAM FROM CRUDE EXTRACT OF *Curcuma longa* (TURMERIC)

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This Final Year Project Report entitled "**Determination of Cream from Crude Extract of *Curcuma longa***" was submitted by Nur Laili Syazwani Binti Ismadi in partial fulfillment of the requirements for the Degree of Bachelor of Sciences (Hons.) Applied Chemistry, in the Faculty of Applied Sciences, and was approved by

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ABSTRACT

DEVELOPMENT OF CREAM FROM CRUDE EXTRACT OF *Curcuma longa* (TURMERIC)

Curcuma longa, commonly known as turmeric, is a natural ingredient produced from the rhizome (root) of Curcuma longa plant. It contains curcumin, which the one who gave bright yellow colour to turmeric. Also, curcumin is the main active ingredient in turmeric and give various health benefits. Adding turmeric extract to skincare products can be useful for skin as it offer many skin benefits. Turmeric has been used for its anti-inflammatory effects since a long time. It usually used in the form of powder and moisturizer. The yield of the Soxhlet extraction with methanol was found to be 5.81%. FTIR analysis showed two peaks which were 3345 cm^{-1} for hydroxyl groups and 1567 cm^{-1} for aromatic compounds, suggesting the presence of phenolic compounds. Since phenolics have anti-inflammatory properties, Total Phenolic Content (TPC) analysis was conducted to assess their potential. The TPC value obtained was 3722.3 mg GAE/g. Furthermore, the formulated turmeric cream had a bright vibrant yellow colour, had a slightly pungent odour and in semi-solid state. The cream did not irritate the skin and it had a pH level of 7.017, which is close to normal skin pH. In addition to that, its viscosity was 542.3 cP while spreadability was 11.25 g.cm/s. The formulated cream had no grittiness and had a type of oil in water (O/W) emulsion. Future studies can be conducted to explore the effectiveness and safety of formulated turmeric cream in clinical trials.

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