EVALUATION OF THE FORMULATED SKINCARE PRODUCTS FROM *CAULERPA LENTILLIFERA*

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This Final Year Project Report entitled **"EVALUATION OF THE FORMULATED SKINCARE PRODUCTS FROM *CAULERPA LENTILLIFERA*"** was submitted by Nur Syafiqah Binti Aziz in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in the Faculty of Applied Sciences, and was approved by

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ABSTRACT

EVALUATION OF THE FORMULATED SKINCARE PRODUCTS FROM *CAULERPA LENTILLIFERA*

This study assessed the chemical and biological qualities *Caulerpa lentillifera*, green tea, kaffir lime leaves, and turmeric for their potential use in skincare products, considering their bioactive compounds applicable in the food, cosmetics, and drug industries. Maceration and extraction methods were employed to extract bioactive components from sea grapes and turmeric. *Caulerpa lentillifera*, green tea, kaffir lime leaves, and turmeric exhibited percentage yields of 45.1%, 36.59%, 38.62%, and 34.82%, respectively. Extracts of sea grapes, green tea, kaffir lime leaves, and turmeric showed antioxidant capacities with IC50 values of 84.93ppm, 68.38ppm, 65.00ppm, and 625.51ppm. Antibacterial properties against E. coli and S. aureus were observed in both extracts at all concentrations tested. Heavy metal analysis indicated that most metals were below the maximum concentration level for skincare products. HPLC analysis revealed the presence of vitamin C and vitamin E in the plant extracts, demonstrating antioxidant compounds. Finally, the extracts were incorporated into serum, medicated soap, and beauty soap formulations.

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