ANTIOXIDANT AND ANTI-TYROSINASE ACTIVITIES OF *Fragaria x ananassa* Duch ETHANOL FRUIT EXTRACT AS ANTI-SKIN AGING

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This Final Year Project Report entitled **"Antioxidant and Anti-Tyrosinase Activities of *Fragaria x ananassa* Duch Ethanol Fruit Extract as Anti – Skin Aging"** was submitted by Alin Nabila Binti Azhar in partial fulfilment of the requirement for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences and was approved by

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ABSTRACT

ANTIOXIDANT AND ANTI-TYROSINASE ACTIVITIES OF *Fragaria x ananassa* Duch ETHANOL FRUIT EXTRACT AS ANTI- SKIN AGING

Fragaria x ananassa Duch. or commonly known as strawberry is a superfruit that is broadly utilized and valued not only due to its taste and aroma, but also due to its nutritional, functional and antioxidant properties. Strawberry are grown at temperatures below 25°C in Cameron Highland, Malaysia and have high antioxidant activity, which has been linked to the fruit's levels of phenolic and anthocyanin compounds. Skin aging is a biological condition that is caused by a combination of intrinsic factors as well as extrinsic factors. UV radiation is the primary cause of skin aging because it increases the level of reactive oxygen species (ROS) in the skin, causing cell damage, premature skin aging, and skin cancer. Hence, antioxidants from *F. x ananassa* could play important roles for the protection factor against oxidative stress and its negative consequences to human health. This research aims to analyse the antioxidant and anti-tyrosinase properties of *F. x ananassa* extract. Samples were extracted by maceration using 96% ethanol. DPPH radical scavenging assay was used to measure the antioxidant activity, while anti-tyrosinase activity was analysed using tyrosinase enzyme. The results showed that *F. x ananassa* extracts in ethanolic have antioxidant activity with an IC_{50} value of 0.132 mg/mL. Meanwhile, tyrosinase inhibitory activity shows, *F. x ananassa* extract has little to no activity as compared to its positive control. According to the result of this study, *F. x ananassa* extract can be considered as source of bioactive compounds with promising antioxidant activity. It is suggested that, *F. x ananassa* extract has a potential as natural free radical scavengers and can be used as antiaging cosmetic ingredients.

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