

**ANTIOXIDANT AND ANTIAGING PROPERTIES OF**  
*Diplazium esculentum*

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**FEBRUARY 2023**

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**Final Year Project Submitted in  
Partial Fulfilment of the Requirements for the  
Degree of Bachelor of Science (Hons.) Biology  
in the Faculty of Applied Sciences  
Universiti Teknologi MARA**

**FEBRUARY 2023**

This Final Year Project Report entitled “Antioxidant and Antiaging Properties of *Diplazium esculentum*” was submitted by Ili Karmila binti Norazli in partial fulfillment of the requirements 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 ANTIAGING PROPERTIES OF *Diplazium esculentum*

*Diplazium esculentum*, a wild edible fern group, has been reported to have several medicinal benefits, but its cosmeceutical potential in terms of antiaging remains unknown. This study investigated the methanol and petroleum ether extracts of *D. esculentum* for their potential antioxidant and antiaging properties. The spectrophotometric method was used to evaluate antioxidant activities determined by DPPH (1,1-diphenyl-2-picrylhydrazyl) free radical scavenging assay at 3, 2, 0.4, 0.008, 0.0016  $\mu\text{g/ml}$  concentration, and to assess antiaging based on tyrosinase inhibition assay at a fixed concentration, 0.5  $\text{mg/ml}$ . The percentage yield of *D. esculentum* in methanol was 4.337%, while it was 1.032% in petroleum ether. Methanol and petroleum ether extract had  $\text{IC}_{50}$  values of 0.505  $\text{mg/ml}$  and 0.347  $\text{mg/ml}$ , respectively. *D. esculentum* in petroleum ether extract had a higher tyrosinase inhibition activity with 76.659%  $\pm$  4.375 than in methanol extract with 51.767%  $\pm$  4.957. These findings indicated that *D. esculentum* has potent antioxidant and antiaging properties that could be used to develop safe and cost-effective antiaging solutions.

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