

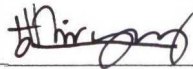
**EVALUATION OF ANTIOXIDANT AND  
ANTIBACTERIAL ACTIVITY OF *Hordeum vulgare*  
METHANOLIC EXTRACT**

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**Final Year Project Report Submitted in  
Partial Fulfilment of the Requirements for the  
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in the Faculty of Applied Sciences  
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## ABSTRACT

### EVALUATION OF ANTIOXIDANT AND ANTIBACTERIAL ACTIVITY OF *H. vulgare* METHANOLIC EXTRACT

Nowadays, not much attention has been given to whole grains as a natural medicines eventhough they possess the antioxidant and antimicrobial properties. The aim of this study is to determine the antioxidant level of the *H. vulgare* extract as well as to evaluate their antimicrobial activity. The quantification of total phenolic content and total flavonoid content of the methanolic extract of *H. vulgare* was determined using the Folin-Ciocalteu and aluminium chloride methods while the antimicrobial activity was determined by agar well diffusion assay. The concentration of methanolic extract used were 50 mg/ml, 100 mg/ml, 250 mg/ml and 500 mg/ml. From the result, the phenolic content ranges from  $0.010 \pm 0.001$  mg GAE/g (lowest concentration is 50 mg/ml) to  $0.182 \pm 0.062$  mg GAE/g (highest concentration is 500 mg/ml) while the flavonoid content ranges from  $0.479 \pm 0.005$  mg QE/g at the concentration 50 mg/ml to  $1.585 \pm 0.194$  mg QE/g at the concentration of 500 mg/ml. For antimicrobial activity, the inhibition zones of *E. coli* ranges from 9.67 mm to 15.67 mm, while *S. aureus* ranges from 5.33 mm to 18.33 mm and *Klebsiella* sp. ranges from 13.00 mm to 16.33 mm at different concentration starting from 50 mg/ml up to 500 mg/ml. However, the positive control which is the Tetracycline showed inhibition zones ranging from 17.00 mm to 19.67 mm. Meanwhile, the negative control DMSO showed no inhibition zones at all. In conclusion, *H. vulgare* methanolic extract was able to show antioxidant and antimicrobial activity against pathogenic bacteria tested.