Total phenolic and flavanoid contents, antioxidant, and antibacterial activities of *Delonix regia* and *Swietenia mahogany*

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Total phenolic and flavonoid contents (TPC, TFC) were determined from the extraction of *Delonix regia* flowers, and *Swietenia mahogany* bark. Methanol and ethyl acetate were utilized as extraction solvents in order to determine optimal extraction conditions. Methanol extraction of *D. regia* flowers resulted in the highest measured TPC. However, methanol extraction of *S. mahogany* bark yielded the highest TFC. Antioxidant activities were evaluated by DPPH and ABTS radical scavenging and FRAP assays. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) were determined utilizing the microbroth dilution method and culturing method. Mass spectrometry was utilized in order to find and characterize extraction compounds. Results indicated that all extracts showed antibacterial activity against *Escherichia coli* and *Staphylococcus aureus* at a similar efficacy as Penicillin. This research project brings forward a better understanding of antibacterial and antioxidant compounds from natural resources and their activities to the benefit of public health and well-being.

Keywords: *Delonix regia*; *Swietenia mahogany*; antioxidant