

# **Effect of various extraction methods and solvent types on yield, phenolic and flavonoid content and antioxidant activity of *Spathodea nilotica* leaves**

## **ABSTRACT**

Phytochemicals are gaining interest as a new source of natural pharmaceuticals to replace synthetic ones, which are controlled owing to potential health hazards and toxicity. A comparison of extract yield, phenolic, flavonoid content and antioxidant activity in various extraction methods were studied. Extraction with different solvent polarity including chloroform (CF), ethyl acetate (EtOAc), acetone (AC), methanol (MeOH), and distilled water (DW) was prepared using maceration extraction (ME),

one of the traditional methods and two methods of recent extraction techniques also known as "Green Extraction" techniques: ultrasound-assisted solvent extraction (UASE) and microwave-assisted solvent extraction (MASE). The antioxidant activity of the extracts was measured using the DPPH method of the antioxidant assay. Higher phenolic (194.3±1.5 and 191.7±0.4, respectively) were found in the methanolic leaf extracts in the case of MASE and UASE than maceration extraction (ME).

Meanwhile, DW extract showed the highest flavonoids (174.3±1.0 and 167.4±1.0, respectively) contents by using UASE and MASE followed by methanolic extract (140.1±0.6 and 136.6±1.1, respectively) compared with the conventional extraction technique. The extraction techniques, as well as the solvent polarity and time of extraction, influenced extract yield, total phenolic and flavonoid content, and antioxidant activity.