

**POCER 1916: Effect of Auxiliary Energy on Anthraquinones and Flavonoids Extraction from *Cassia alata***

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**ABSTRACT**

This paper presents the effect of auxiliary energy on anthraquinones and flavonoids from *Cassia alata*. The effect of auxiliary energy ranging from 0.045 to 10 W/ml was studied by performing an unbiased and unsupervised analysis via principle component analysis (PCA) to determine the difference in bioactive components using ultrasonic assisted extraction (UAE) (0.153 to 1.054 W/ml), maceration (ME) (0.045 W/ml) and microwave assisted extraction (MAE) (5 to 40 W/ml). Besides that, the effect of particle size diameter (PSD), solvent ratio, solid to solvent ratio, extraction time, amplitude and microwave power on the yield of kaempferol (Ka) and emodin (Em) using UAE, MAE were investigated using a single factor experiments (OFAT). It was found that MAE was the most efficient method with highest yield and 60x faster than ME. This work may serve as a useful guide to get the highest extraction yield of anthraquinones and flavonoids from *C. alata*.

**KEYWORDS**

*Cassia alata*; principal component analysis; microwave assisted extraction; anthraquinones; flavonoids; UPLC-QTOF-MS.

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