

P-131**Comparison of Microwave-Assisted Extraction and Hydrodistillation Method in the Extraction of Essential Oils from *Aquilaria malaccensis* (Agarwood) Oil**

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Aquilaria malaccensis (Thymelaeaceae) is a type of agarwood, mainly found in Malaysia. Microwave-assisted extraction (MAE) method, a new technique to extract essential oil from agarwood, was used and compared to hydro-distillation (HD). Influence of microwave power 200-500 watt (W) and irradiation duration (3-5 hours) on essential oil extraction and chemical compounds were analysed via gas chromatography with flame ionization detection (GC-FID) and gas chromatography with mass spectrometry (GC-MS). MAE extracts yield at 500 W in 5 hours is 0.22% and the main components present were 4-phenyl-2-butanone (11.5%), hinesol (10.3%), and guaiol (5.9 %), while yield of HD extracts in 12 hours is 0.20% and the major components present were 4-phenyl-2-butanone (7.0%), eudesmol (11.5%) and hinesol (9.0%). The percent composition of chemical compounds from MAE extracts (87.0%) and HD extracts (88.4%) were quite similar. MAE is more advantageous than HD in terms of energy savings, extraction time (5 hours for MAE against 12 hours for HD) and number of identified compounds; MAE identified 57 compounds while 49 compounds by HD. MAE offers a modern, fast and green technology.
