

DEVELOPMENT OF ESSENTIAL OIL EXTRACTION BY MICROWAVE ASSISTED PROCESS FROM A LOCAL PLANT

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ABSTRACT

Microwave Assisted Process (MAP) is a high speed technique for selective extraction of target compounds of Essential Oil (EO) from selected raw materials using a microwave at 2.45GHz which is S-band applicator as the energy source during extraction leading to: fast processing time; improved yield and quality; direct extraction capability; lower energy consumption; reduced solvent levels and lower capital investment. Microwave Solvent Extraction Labstation (ETHOS SEL) and Hydro-Distillation (HD) were compared for the extraction of essential oil from *mesua ferrea* L. (Guittiferea) leaves. The results obtained revealed that the technique is efficient and used small amount of solvent, i.e. the first essential oil droplets came out in 5 min with ETHOS SEL and in 60 to 90 min for HD. In 40 min of extraction it is possible to collect a sufficient amount of essential oil for analytical determination by Gas Chromatography (GC) and Gas Chromatography coupled to Mass Spectrometry (GC/MS). ETHOS SEL essential oil is found rich in major compounds compared to HD. This is a new technique that combines microwave heating and dry-distillation provides more valuable essential oils, reduces the extraction time, and allows a substantial saving energy.

<http://journal.masshp.net/wp-content/uploads/Journal/2006/Rudy%20107-114.pdf>

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