

The Constituent Contents Analyses of Essential Oils from the Leaves of *Melaleuca leucadendra* by Four Different Extraction Methods

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The purpose of this study is to compare the constituent contents of essential oils from the leaves of *Melaleuca leucadendra* (ML) that were collected in Taiwan. Four essential oils were obtained from ML with four extraction methods, including water distillation, steam distillation, CO₂ supercritical fluid extraction and n-hexane extraction. They were calculated the extract yields, respectively, and then were analyzed by GCMSMS to compare their constituents contents. The results showed that the highest extract yield was CO₂ supercritical fluid extraction (4.11%), the lowest extract yield was water distillation (1.05%). Eucalyptol was found in four essential oils. Steam distillation exhibited the highest content of eucalyptol, 57.94%, and n-hexane extraction method had the least of eucalyptol, 4.06%. Other constituents such as limonene, *p*-menth-1-en-8-ol, viridiflorol and nerolidol were also found in four essential oils. Our study results demonstrated that using different extractions to obtain various essential oils had significant differences in constituent contents.