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研究简报

自制微波辅助无溶剂萃取装置及GC/MS分析白玉兰花挥发油

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摘要 利用普通的家用微波炉改装和自制微波辅助无溶剂萃取装置，采用微波辅助无溶剂萃取法和传统水蒸气蒸馏法提取白玉兰花挥发油，用气相色谱-质谱（GC/MS）法分析鉴定，并用GC/MS总离子流色谱峰的峰面积归一化法确定挥发油成分的相对百分含量。实验结果表明，微波辅助无溶剂萃取法与水蒸气蒸馏法所得的挥发油成分基本相同，但微波无溶剂萃取挥发油的收率（0.80%）高于水蒸气蒸馏法的收率（0.68%）。自制的微波辅助无溶剂萃取装置具有价格便宜、容易推广使用等优点，同时在该装置基础上进行的微波无溶剂萃取法是一种真正意义上的无污染、快速、高收率的提取鲜活香料植物挥发油的萃取技术。

关键词

微波辅助无溶剂萃取 气相色谱-质谱法 白玉兰 挥发油

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Homemade Solvent Free Microwave Extraction Device and Analysis of Volatile Oil from *Magnolia Heptapeta (Buc'hoz) Dandy* by GC/MS

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Abstract

A set of solvent-free microwave extraction device was set up by using modified ordinary household microwave oven. The chemical constituents of volatile oil of *Magnolia heptapeta (Buc'hoz) Dandy* were extracted by solvent free microwave extraction (SFME) and traditional steam distillation(SD). The chemical constituents were separated and identified by GC/MS. The relative content was performed by peak area normalization. The results show that there is no obvious difference in the quality of volatile oils obtained by two kinds of extraction methods, but the yield of SFME is 0.80%, which is higher than the yield of SD (0.68%). There are some advantages of the modified homemade SFME device: the price is low and it can be promoted easily. The SFME method offers important advantages over SD: shorter extraction times, substantial savings of energy and a reduced environmental burden. SFME is a non-pollution green technology and as a good rapid and high yield new method for the extraction of volatile oils from fresh aromatic plants.

Key words solvent-free microwave extraction (SFME) GC/MS *Magnolia heptapet*

a *(Buc’hoz)* *Dandy* volatile oil

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