

## Abstract

*Rhizoma Cyperi*, belonging to family *Cyperaceae*, is the rhizome of the plant *Cyperus Rotundus L.* It is mainly distributed in Shandong, Zhejiang, Hunan and Henan province in China. And the products from Shandong province and Zhejiang province is better. It can release stagnation of the liver *Qi* characterized by distending pain in the chest, hypochondria and epigastrium, indigestion, feeling of stuffiness in the chest and epigastrium, abdominal colic, distending pain in the breast, menstrual disorders, amenorrhea of dysmenorrhea. It was traditionally used for soothing the liver and regulating flow of *Qi*, regulating menstruation to relieve pain.

*Cyperus Rotundus* contains 0.65%~1.4% volatile oil. Hydro distillation (HD) is the traditional method to extract the oil. Supercritical Fluid Extraction (SFE), a new method, was widely used in many fields. A few studies about the extraction of *Cyperus Rotundus* had been reported. Pressurized Solvent Extraction (PSE) is a method extracted by solvent in high temperature and pressure. It has not been used in *Cyperus Rotundus* study before.

This thesis consists of four chapters. **Chapter 1** is the literature review on *Cyperus Rotundus*, which includes the recent development on chemical compositions, pharmacological studies and extraction methods of *Cyperus Rotundus*. **Chapter 2** is about the separation and confirmation of chemical compound in volatile oil. One compound was isolated and identified by MS and NMR data. Purity test showed that the compound can be used as chemical standard. The qualitative and quantitative analysis of *Cyperus Rotundus* by using GC-MS was showed in **chapter 3**. **Chapter 4** focused on the study of extraction methods. PSE and SFE were optimized. Finally, comparisons were made between HD, PSE and SFE. The result indicated that the extraction efficiency of PSE is better than HD and SFE.

**Key words :** *Cyperus Rotundus* *α-cyperone* Hydro Distillation  
Pressurized Solvent Extraction Supercritical Fluid Extraction  
Gas Chromatography-Mass Spectrum