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Efficient Extraction Methods and Analysis of Essential Oil from Softwood Leaves

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Objectives

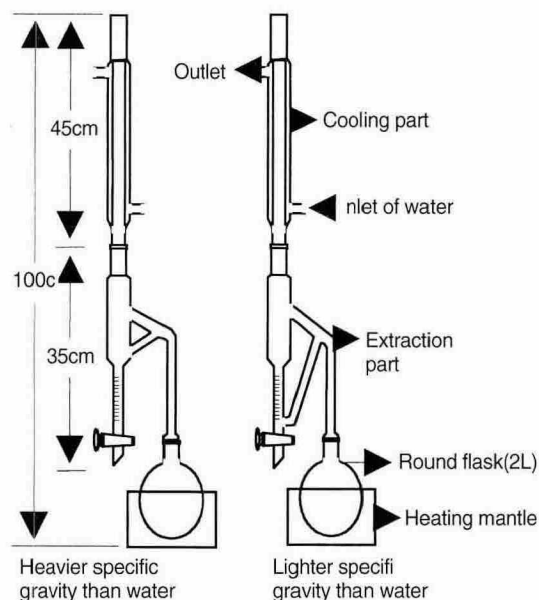
For development of valuable essential oil from forest resources, the efficient extraction methods of essential oil as pretreatment of leaves, ratios of water and leaves, extraction hours and collection season from the *Chamaecyparis obtusa* and *Chamaecyparis pisifera* leaves were studied, and chemical composition of essential oil was analyzed by GC-MS.

Materials and Methods

1. Materials: *Chamaecyparis obtusa* and *Chamaecyparis pisifera* leaves
 2. Methods: Optimal extraction condition : extraction pretreatment, mixing ratios of water and leaves, extraction hours and collection season
- GC-MS analysis: HP 5890 Series II GC, HP-1 column (60 mm × 0.25 mm × 0.25 μm),

Results and Discussion

The yield of essential oil from grinded leaves was higher than that of chopped leaves. Mixture ratios of water and leaves were somewhat affected on yields of essential oil. The yield of essential oil on extraction hour reached maximum in 5 extraction hour. The content of essential oil of *C. obtusa* leaves collected in winter was 4.5%, whereas content of essential oil of *C. pisifera* collected in fall of was 5.3%. The compositions of essential oils between *C.*



obtusa and *C. pisifera* were difference. The major constituents in the essential oil of *C. obtusa* were monoterpene as limonene, terpinene-4-ol, γ -selinene and α -cedrene, and it was monoterpenes as α -pinene, myrcene, limonene, bornyl acetate, β -caryophyllene, longifolene and β -cedrene.

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