

Extraction Essential Oil from *Thymus vulgaris* L. Leaves Using Microwave Reactor: Optimization and Kinetic Study

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Abstract

In this work, the extraction of natural oil from closed *Thymus vulgaris* L. (thyme) leaves was examined utilizing microwave hydro-refining. Microwave hydro-refining strategy was read up for the extraction of *Thymus vulgaris* L. oil. Besides, the impact of the size of the material (unblemished and hacked leaves), the impact of the proportion of the heaviness of unrefined substance to the volume of dissolvable (1:10, 1:20 and 1:30g/ml) and the impact of microwave power (500 and 700W) to the yield of thyme oil and energy through the extraction interaction. Thus, at that point, a microwave hydro-refining model in light of the presumption of a second-request system was created to foresee the rate steady of extraction. In this exploration, the best conditions were at 1hr as an extraction time for 700w microwave power, dissolvable to strong proportion of 1g plant leaves/30ml dissolvable for the hacked plant. Chromatography-Mass Spectrometry (GC-MS) was utilized as a portrayal procedure to examine and recognize the got thyme oil to its structure compounds.