

Optimization, Yield and Chemical Composition of Essential Oil from *Cymbopogon citratus*: Comparative Study with Microwave Assisted Extraction and Hydrodistillation

Authors : Irsha Dhotre

Abstract : *Cymbopogon citratus* is generally known as Indian Lemongrass and is widely applicable in the cosmetic, pharmaceutical, dairy puddings, and food industries. To enhance the quality of extraction, microwave-oven-aided hydro distillation processes were implemented. The basic parameter which influences the rate of extraction is considered, such as the temperature of extraction, the time required for extraction, and microwave-oven power applied. Locally available CKP 25 *Cymbopogon citratus* was used for the extraction of essential oil. Optimization of Extractions Parameters and full factorial Box-Behnken design (BBD) evaluated by using Design expert 13 software. The regression model revealed that the optimum parameters required for extractions are a temperature of 35°C, a time of extraction of 130 minutes, and microwave-oven power of 700 W. The extraction efficiency of yield is 4.76%. Gas Chromatography-Mass Spectroscopy (GC-MS) analysis confirmed the significant components present in the extraction of lemongrass oil.

Keywords : Box-Behnken design, *Cymbopogon citratus*, hydro distillation, microwave-oven, response surface methodology

Conference Title : ICCBE 2023 : International Conference on Chemical and Biochemical Engineering

Conference Location : Bengaluru, India

Conference Dates : January 30-31, 2023