

**MICROWAVE-ASSISTED EXTRACTION OF CANNABIDIOL AND Δ^9 -
TETRAHYDROCANNABINOL FROM CANNABIS AREAL PARTS AND PROCESS
MODELING**

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Cannabis contains 66 cannabinoids which are divided into 10 subclasses: cannabigerol (CBG) type, cannabichromene (CBC) type, cannabidiol (CBD) type, Δ^9 -tetrahydrocannabinol (THC) type, Δ^8 -THC type, cannabicyclol (CBL) type, cannabielsoin (CBE) type, cannabinol (CBN) and cannabinodiol (CBND) types, cannabitrilol (CBT) type, and miscellaneous types subclass. In industrial cannabis, the allowed content of THC, which is the carrier of psychoactive activity, is different in different countries. According to the European Monitoring Centre for Drugs and Drug Addiction in the European Union countries, THC is allowed to be 0.2% expressed on dry matter, while in Serbia it is allowed to contain 0.3%. In most countries of the European Union, cannabis is legalized for medical purposes. Some countries allow its use only in the form of ready-made preparations containing isolated or chemically synthesized certain cannabinoids, while others allow the use of the extract.

The extraction of CBD and THC of industrial cannabis was carried out by a microwave-assisted technique, an emerging environmentally-friendly technology. The effects of different extraction parameters (ethanol concentration (30-70%), extraction time (10-30 min), and liquid/solid ratio (5-15 mL/mg)) on the extraction of CBD and THC were investigated using a response surface methodology. In obtained extracts content of CBD was in the range from 0.034 to 0.064 mg/mL, and content of THC was in the range from 0.224 to 1.842 mg/mL. Experimental results were described by the second order polynomial model. Model was estimated using analysis of variance (ANOVA). The optimization process carried out in order to obtain the most optimal content of desired types of cannabinoids.