

# BOOK of ABSTRACTS



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## Nutraceuticals and Pharmaceuticals



## **ULTRASOUND-ASSISTED EXTRACTION OF CANNABIDIOL AND $\Delta^9$ -TETRAHYDROCANNABINOL FROM CANNABIS AREAL PARTS AND PROCESS MODELING**

***Zorica Drinić<sup>1,2</sup>, Jelena Vladić<sup>1</sup>, Senka Vidović<sup>1</sup>, Anamarija Koren<sup>3</sup>, Biljana Kiprovski<sup>3</sup>, Nadežda Stojanov<sup>3</sup>, Tijana Zeremski<sup>3</sup>***

<sup>1</sup>*Institute for Medicinal Plant Research “Dr. Josif Pančić”, Tadeuša Koščuška 1, 11000 Belgrade, Serbia*

<sup>2</sup>*University of Novi Sad, Faculty of Tehnology Novi Sad, Bul. cara Lazara 1, 21000 Novi Sad, Serbia*

<sup>3</sup>*Institute of Field and Vegetable Crops, Maksima Gorkog 30, 21000 Novi Sad, Serbia*

*Cannabis sativa* L. contains more than 480 known compounds from 18 different chemical classes. The most important biologically active compounds of industrial hemp are cannabinoids:  $\Delta^9$ -tetrahydrocannabinol (THC), cannabidiol (CBD), cannabinol (CBN), cannabigerol (CBG), cannabichromene (CBC), and cannabiodiol (CBND). Besides this, cannabis also contains hydrocarbons, nitrogen-containing compounds, carbohydrates, flavonoids, noncannabinoid phenols, simple alcohols, aldehydes, ketones, acids, esters, and lactones.

The extraction of CBD and THC of industrial hemp was carried out by a ultrasound-assisted technique, an emerging environmentally-friendly technology. The effects of different extraction parameters (extraction temperature (40-80°C), extraction time (20-60 min), and ultrasonic power (24-60 W/L) 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 0.6158 to 0.8752 mg/mL, and content of THC was in the range from 0.0412 to 0.0458 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.

***Keywords: C. sativa L., Ultrasound-assisted extraction, THC, CBD, RSM***

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