

4th International Conference and Exhibition on

Food Processing & Technology

August 10-12, 2015 London, UK

Optimization of the extraction process of antioxidants from *Lotus corniculatus* L. using response surface methodology

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Different extraction conditions may significantly influence extraction of particular compound groups. In present study response surface methodology (RSM) based on Box-Behnken design was used to define the best combination of extraction temperature (20-60°C), ethanol concentration (10-90%) and extraction time (60-180 min) for maximum yield of antioxidant compounds and maximum antioxidant activity of orange extracts. Experimental values of total phenols yields were in the range from 4.70 to 5.20 mgGAE/ml, while total flavonoids content was in the range from 2.35 to 2.70 mgRE/ml. Antioxidant activity expressed as the 50% inhibition concentration (IC₅₀ value) was in the range from 0.055 to 0.095 mg/ml. The experimental results were fitted to a second order quadratic polynomial model and they have shown a good fit to the proposed model (R²>0.90). Determined optimized conditions for maximizing yield of antioxidant compounds were within the experimental range.

Biography

Milica Zelenika is Ph.D student on the Faculty of Agronomy, Cacak, University of Kragujevac from 2014. She graduated academic - Master studies of Biology on the University of Belgrade - Master of biology 2012, and 2010 finished undergraduate studies of Biology on the University of Belgrade. She visit plenty national and international biological research camps, and work as a researcher or mentor of different Sections. She worked on the project "Empty batteries - filled basket" in the implementation of the Cultural center Lift from Cacak in the competition "Really important changes," the Foundation "Ana and Vlade Divac" Fields of interest: Herbal extraction, Antimicrobial activity of plant extracts.

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