



HRVATSKI SKUP KEMIČARA I KEMIJSKIH INŽENJERA

s međunarodnim sudjelovanjem | 4. simpozij "Vladimir Prelog"

9. – 12. travnja 2019. • Šibenik, Amadria Park (Solaris)

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with international participation | 4th Symposium "Vladimir Prelog"

April 9–12, 2019 • Šibenik, Amadria Park (Solaris), Croatia

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# Knjiga sažetaka

## *Book of Abstracts*

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9–12 April 2019  
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## Subcritical water extraction of bioactive compounds from tobacco waste Ekstrakcija bioaktivnih komponenti iz duhanskog otpada vodom u subkritičnom stanju

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Industrial processing of tobacco generates large amounts of waste. Tobacco waste has high nicotine content. It also has a high content of solanesol and is rich in other alkaloids and phenolic compounds. Therefore, final disposal of tobacco waste in the environment is difficult. Re-using in the industry is suggested to limit their harm to the environment. This study evaluated subcritical water extraction (SWE) of bioactive compounds from tobacco waste (scrap, dust and midrib) obtained from tobacco processing factory "Fabrika duhana Sarajevo". Recently, SWE has become a popular green extraction technique for the extraction of different classes of bioactive compounds from plant materials. The objectives of this work were: (a) to separate valuable compounds from tobacco waste by applying sustainable green separation process—subcritical water extraction (SWE); (b) identification and quantification of active compounds in obtained extracts using HPLC. Depending on applied extraction conditions (extraction temperature, time and solvent/solid ratio), different concentrations of active compounds were determined in the extracts. Contents of those compounds in tobacco waste were compared with starting material (tobacco leaves). Extracts were characterized with high level of nicotine and considerable amounts of nicotinic acid, nicotinamide, 5-(hydroxymethyl)furfural, furfural, 5-methylfurfural, 3,4-dihydroxybenzoic acid, chlorogenic acid and rutin.

Considering these bioactive compounds as tobacco waste ingredients is beneficial due to their biological properties such as antioxidant, anticancer, antifungal and other activity.