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49th International Symposium on Essential Oils (ISEO2018)
Book of Abstracts

UNIVERSITY OF NIŠ

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49th ISEO

WELCOME

On behalf of the Organizing Committee, it is my great pleasure to welcome you to the 49th International Symposium on Essential Oils (ISEO2018).

Over the years, this prestigious annual symposium has developed into a unique meeting arena between leading experts, academic and industry scientists involved in the essential-oil research and representatives of the essential-oil industry from all around the world. The 49th ISEO will feature plenary lectures and presentations of cutting-edge science of essential oils from a diverse group of scientists in the fields of natural product isolation, organic synthesis, chemometrics, chemical biology, biosynthesis, pharmacology and analytical methodology development. Recent advances and future trends in the application of essential oils and their constituents in the fragrance industry, pharmacy, cosmetology, food production and agriculture will be highlighted, as well. The meeting will provide opportunities for in-depth scientific discussions and sharing unpublished results in both formal and informal settings.

Although ISEO symposia have a tradition of nearly half a century, it will take place in Serbia for the first time. Niš is the third largest city in Serbia, situated on the river of Nišava and represents a cultural, economic, administrative, business and university center of southeastern Serbia. For centuries, an important geographical and strategic position of the town has determined its destiny, so this region was inhabited by the Romans, Goths, Illyrians, Celts, Ottomans, Slavs, etc. Alongside rich cultural and historical heritage, southeastern Serbia has a unique natural beauty with two stunning gorges surrounded by picturesque Suva planina mountain characterized by exceptional biological diversity.

Many geographers, travelers, and historians considered the city of Niš as a gateway between the East and West, and we will set this as our main goal–to unify scientists from universities, research centers and industry from all over the world and to join different cultures and knowledge together.

ISEO2018 abstracts are published in the Special Issue of *Facta Universitatis: Series Physics, Chemistry and Technology*, a scientific journal published by the University of Niš since 1986. The outstanding contributions presented at the ISEO2018 Symposium (plenary lectures, oral and poster presentations) will enjoy the opportunity of having their full work published in the *Food & Chemical Toxicology* Special Issue dedicated solely to the "Toxicity of essential oils and their constituents".

I wish all of the ISEO2018 participants a highly successful and enjoyable symposium and many unforgettable memories of your stay in Niš, Serbia. Thank you for joining us at this meeting!

Dr Niko Radulović
The President of the ISEO2018 Organizing Committee

ISEO2018 Organizing Committee

President

Niko Radulović

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PP41. The composition of the essential oils of *Acorus calamus* L. rhizomes from different habitats

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Keywords: *Acorus calamus*, essential oil, β-asarone

Sweet flag rhizome (*Acorus calamus* L., Acoraceae) possesses various biological activities such as sedative, anticonvulsant, immunosuppressant, antidiabetic, antiinflammatory etc. [1]. The aim was to study the content and composition of essential oils from 24 rhizome samples of the cultivated sweet flag, their comparison with the samples from 5 natural habitats, and the influence of nitrogen fertilization on the composition of essential oils. Essential oils were analyzed using GC and GC/MS. Statistical analysis included the analysis of variance and cluster analysis. The content of essential oil was not significantly different between the samples from natural habitats (0.8-1.1%) and cultures (0.3-2.2%). All samples contained dominant oxygenated sesquiterpenes (24.5-32.6%), phenylpropanoids (5.7-22.5%), and oxygenated monoterpenes (4.4-19.2%). The main components were β-asarone (10.4-21.4%), camphor (3.5-15.2%), acorenone (9.3-14.1%) and cyperotudone (7.3-11.0%). The contents of β-asarone and aristolone were significantly higher ($p<0.05$) in cultivated plants. The nitrogen fertilization during the cultivation did not have a significant influence ($p<0.05$) on the content and composition of the essential oils.

References:
[1] Rajput, S.B. et al., 2014. Phytomedicine 21, 268–276.

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