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University of Belgrade
210th Anniversary
OCTOBER 5-6 2018

**PROGRAM
I
ZBORNIK RADOVA**

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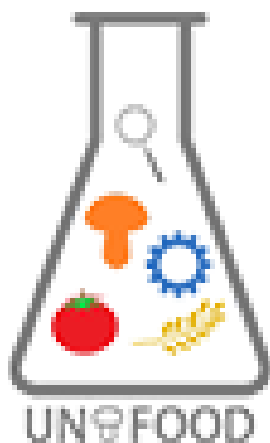
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UNIFood Conference

October 5-6 2018 University of Belgrade **210th Anniversary**



| | | |
|-------------|---|--|
| 11:15-11:25 | <p><i>Amaranthus caudatus</i> L. izvor betacijanina sa antimikrobnim i potencijalom za bojenje</p> <p><i>Amaranthus caudatus</i> L. as a source of betacyanins with coloring and antimicrobial properties</p> | <p>Roriz et al.</p> <p>Politehnički institut Braganca i direktor Centra za istraživanje (CIMO), Braganca, Portugal. Direktor Mountain Research Centra (CIMO), Bragança, Portugalija</p> <p>Nutricija I Bromatologija, Fakultet za farmaciju, Univerzitet u Madridu, Španija</p> <p>Centro de Investigaçao de Montanha (CIMO), Instituto Politécnico de Bragança, Bragança, Portugal</p> <p>Nutrición y Bromatología II. Facultad de Farmacia. Universidad Complutense de Madrid (UCM), Madrid, Spain.</p> |
| 11:25-11:35 | <p>Alternativni izvor n-3 masnih kiselina poreklom iz biljaka</p> <p>Alternative sources of n-3 fatty acids from plant origin</p> | <p>Petropoulos et al.</p> <p>Univerzitet u Tesalonikiju, Odeljenje za poljoprivredu, useve i ruralnu sredinu, Volos, Grčka</p> <p>University of Thessaly, Department of Agricultur, Crop Production and Rural Environment, Volos Greece</p> |
| 11:35-11:45 | <p>Masno-kiselinski sastav ulja semenki internacionalnih i autohtonih sorti grožđa</p> <p>Fatty acid composition of lipids of international and autochthonous grape seed varieties</p> | <p>Milinčić et al.</p> <p>Univerzitet u Beogradu, Poljoprivredni fakultet, Beograd, Srbija</p> <p>University of Belgrade, Faculty of Agriculture, Belgrade, Serbia</p> |
| 11:45-11:55 | <p>Hemijski sastav karotenoida i tokola u masnom ulju iz semena autohtone sorte grožđa - tamjanike (<i>Vitis vinifera</i> L.) i njegova antimikrobna aktivnost</p> <p>Chemical composition of carotenoids and tococls in fatty oil from the seeds of autochthonus grape variety - tamjanika (<i>Vitis vinifera</i> L.) and its antimicrobial activity</p> | <p>Stojković et al.</p> <p>Institut za biološka istraživanja „Siniša Stanković“, Univerzitet u Beogradu, Beograd, Srbija</p> <p>Institute for Biological Research „Sinisa Stankovic“, University of Belgrade, Belgrade, Serbia</p> |



UNIFood Conference

Predavanje i usmene prezentacije u okviru sekcija/Lecture and oral presentation within sections
BEZBEDNOST I KVALITET HRANE / FOOD SAFETY AND QUALITY



BKH17 / FQS17 U/O

Alternative sources of n-3 fatty acids from plant origin

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N-3 fatty acids are considered essential for human health, since they are associated with beneficial effects against many diseases of modern world. The most common dietary sources of n-3 fatty acids are fishes such as salmon and sardines among others, which are also incriminated with high heavy metals content. Flax or linseed is the most widely known plant source of n-3 fatty acids and is the main ingredient of food supplements. The aim of the present study was to evaluate seeds and seed oils of purslane as alternative sources of n-3 fatty acids. For this purpose, purslane seeds, oils from seeds extracted with three methods (screw press methods with or without a cooler), and seed presscakes were evaluated in terms of fatty acids composition and cytotoxicity. For comparison purposes, three commercial linseed oils, one cucurbit oil and one luffa oil were also analyzed in terms of fatty acids composition and cytotoxicity against various human tumor cell lines. The results of the study showed that linseed oils were abundant in α -linolenic acid (65.62%-71-90%), followed by linoleic and oleic acids (12.87%-17.98% and 6.43%-7.09%, respectively), while n6/n3 and PUFA/SFA ratios were lower than 4.0 and higher than 0.45, respectively. In contrast, cucurbit and luffa oils have very low amount of α -linolenic acid, since they contained mostly linoleic, oleic, palmitic and stearic acid, which resulted in very high values of n6/n3 ratios. The main detected fatty acids in purslane seed oils were α -linolenic and linoleic in amounts that depended on the extraction method. Seeds and seed presscakes also contained high amounts of α -linolenic acid and linoleic acids; however, extraction method affected fatty acids composition and values of n6/n3 and PUFA/SFA ratios. Finally, luffa oil showed the highest cytotoxicity against HeLa and NCI-H460 tumor cell lines, followed by cucurbit and one of the tested linseed oils. In conclusion, purslane seeds and seed oils could be considered as alternative n-3 fatty acids, while they have a balanced fatty acids composition and show moderate cytotoxicity against specific tumor cell lines.