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OF ORGANIC CHEMISTRY
WITH CENTRE OF PHYTOCHEMISTRY
Bulgarian Academy of Sciences

ICBA 2017

First International Conference on Bio-antioxidants ICBA 2017

"Natural bio-antioxidants – as a base for new synthetic drugs and food additives/supplements"

BOOK OF ABSTRACTS

Young Scientists School on Bio-antioxidants YSSBA 2017

25-29 June 2017
Bulgarian Academy of Sciences - Presidium
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Phytochemical screening and antioxidant capacity of *R. damascena* Mill. flowers dry extract

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The by-products of agriculture industry have attracted the attention of scientists because of their potential antioxidant properties. *R. damascena* Mill is considered as one of the most important products for Bulgaria economy. Besides the rose essential oil, other famous rose products are concrete and absolute oils. The concrete oil is prepared by extraction of the fresh rose petals with n-hexane. What to do with this large amount of waste plant material?

The present study aimed a phytochemical characterization and assessment of the antioxidant capacity of the rose flowers after concrete oil production. Thus, the processed rose flowers were extracted with aqueous methanol followed by spray drying. Total phenolic content, total flavonoid content and total monomeric anthocyanins, determined spectrophotometrically, were found to be 185.99±5.05 mg GAE/g DE, 154.90±3.41 mg RE/g DE and 22.71±1.77 mg CGE/L extract. Rutin, hyperoside, isoquercitrin, quercitrin, astragalin were detected in the studied extract by TLC comparison with authentic standards. The presence of quercetin and kaempferol glycosides was confirmed by acid hydrolysis of the extract and TLC comparison with the corresponding aglycones. The antioxidant capacity of the rose flower dry extract was measured by its ability to scavenge the DPPH radical. Thus, the extract at concentration of 0.33 mg/ml was scavenging 64% of DPPH radicals. The antioxidant capacity expressed in Trolox equivalents (TE) was found to be 1.58±0.05 mM TE/g DE.

The results of this laboratory scale study showed that the by-product obtained after concrete oil production could be regarded as a good inexpensive source of antioxidant polyphenolics and used as health-promoting ingredient of functional foods and dietary supplements.

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