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PHENOLIC ACIDS OF SEA BUCKTHORN (HIPPOPHAË RHAMNOIDES L.)

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Introduction. Phenolic acids are a large group of biologically active substances which belong to group of phenolic derivatives. Interest in this group of compounds is explained by the large range of biological action, wide distribution in nature, they are from to the classes of practically non-toxic or relatively harmless substances. Most phenolic compounds are antioxidants due to the binding of free radicals and heavy metal ions.

Aim. To carry out analysis of the phenolcarbonic acids of the sea-buckthorn fruit.

Materials and methods. The object of the study was the fruits of the sea buckthorn variety «Solodka zhinka» (zoned in Ukraine, state register No. 98078003).

For setting the thin-layer chromatogram were used the following systems of solvents: butanol – acetic acid – water (BAW) (4:1:2), 2% and 15% acetic acid, ethylacetate – formic acid – water (88:6:6); chromatographics plates «Silufol» number 366, 254 and «PTSH – AF – A – UV»; solution of following reagents: ferum chloride, aluminum chloride and saturated alcohol solution of ferum sulfate. Realiztion of thin-layer chromatogram showed that the plates «PTSH – AF – A – UV» and «Silufol» number 366 have the best division in the system BAW (4:1:2) and ethylacetate – formic acid – water (88:6:6). Then, the system BAW (4:1:2) were choosen for the search of phenolic derivaties. The biggest division was given by a chromatographic plate «PTSH – AF – A – UV». More clean and exact spots in UV and day-light were observed on a plate «Silufol» number 366. Revealing reagents in this case were solutions of aluminum chloride and saturated alcohol solution of ferum sulfate. Solution of aluminum chloride became the best revealing reagent, that in turn, in interaction with phenolic derivaties gave colors in UV and day-light from brightly-green to lemon. But plates under the effect of this reagent were subject to corrosion and did not save the primordial kind. Same effection with his action appeared the saturated alcohol solution of ferum sulfate. In interaction with phenolic derivaties it colored them in dark tones. Identification of phenolic acid were carried out using physico-chemical properties, chromatographic Rf-value and comparing with reference compouds.

Results and discussion. The results of the study indicate that the sea buckthorn variety «Solodka zhinka» fruits contain chlorogenic, caffeic, syringic, coumaric, ferulic, synapic, cinnamomic, quinic acids.

Conclusions. A preliminary chromatography analysis indicates a high content of quinic, chlorogenic and caffeic acids.

THE STUDY OF IRIDOIDS OF THE GENUS *VERONICA* L. CULTIVATED SPECIES

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Introduction. Plants of genus *Veronica* (*Plantaginaceae*) are distributed worldwide, in particular in a territory of Ukraine (up to 70 species), formal species are not. Species of genus *Veronica* L. are widely cultivated in Ukraine as ornamental plants with very beautiful and different inflorescences. Though plants

have been used in folk medicine of many countries as a sedative, an expectorant, a wound healing, a haemostatic and an anti-bacterial remedies a long while, their chemical composition are studied poorly.

The aim of the study was chromatographic research of iridoids of cultural samples of *V. spicata* L. herb and of *V. incana* L. herb.

Materials and methods. Objects of the study were cultural samples of *V. spicata* herb varieties: «Rosea», «Alba», «Blue Carpet» and of *V. incana* herb variety «Silver Carpet». Raw materials have been harvested Botanical garden of V. N. Karazin Kharkiv National University in the flowering stage (June) in 2017.

Extracts of cultural samples of *V. spicata* L. herb and of *V. incana* L. herb obtained by ethanol 50% have used for thin-layer chromatography. Analysis conditions: a chromatography wax «Sorbfil», a solvent system: ethylacetate – formic acid – water (10:2:3), single division at the temperature 20-22ºC. The identification was carried out in filtrated UV-light (354 nm) by features fluorescence, by the value of R_f and by results to interaction with chromogenic reagents: Stahl reagent and vanillin reagent. The chromatogram was dried at 80 °C in a drying oven. Iridoids were shown as pink, purple, blue-gray, dark gray and yellow spots.

The results and discussion. It has been found that Stahl reagent was specific for Veronica's iridoids because more iridoids were identified by which. As a result of the study in *V. spicata* herb variety «Rosea» 7 iridoids had been identified, 6 iridoids – in *V. spicata* herb variety «Alba», 9 iridoids – in *V. spicata* herb variety «Blue Carpet» and 6 iridoids – in *V. incana* herb variety «Silver Carpet». Among identified compounds derivatives of catalpol were dominant. Aukubin (Rf=0.55) and catalpol (Rf=0.40) had been identified in all cultural samples.

The chromatographic study has shown that *V. spicata* herb variety «Blue Carpet» had more iridoids with high spots magnitude than other cultural samples.

Conclusions. Studies indicate that the further in-depth study of cultural samples of *V. spicata* L. and of *V. incana* L. can be considered promising.

ANALYSIS OF BIOLOGICAL ACTIVE COMPOUNDS OF A HELICHRYSUM ARENARIUM VARIETY «ZOLOTYSTYY»

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Introduction. The widely known medicinal plants used in official medicine for the treatment of diseases of the hepato-biliary system is the immortelle Helichrysum arenarium, Asteraceae. The pharmacological action of immortelle flowers is determined by flavonoids, tannins, and other biologically active substances.

Aim. To analyze the derivatives of flavonoids and phenolic compounds in the raw material of Helichrysum arenarium variety «Zolotistyy».

Materials and methods. For the analysis, flowers, stems and leaves of immortelle sandy, variety «Zolotystyy», which was grown in 2018 on the plantation of the station of medicinal plants (Beresotocha, Experimental station of medicinal plants), dried and standardized according to GACP requirements, were used. For preliminary analysis of phenolic compounds, paper chromatography (Filtrak No. 11) and TLC (Sorbfil, Merck plates) were used in the following solvent systems: 1) 15% solution of acetic acid; 2) benzene - acetic acid (5: 2); 3) benzene - methyl alcohol (8: 2); 4) benzene - methyl alcohol - acetone (8: 2: 10), anhydrous formic acid - water - ethyl acetate (10:10:80); isopropanol - chloroform - acetic acid glacial (15: 15: 0.5). 10 μl of methanol solutions of standard samples and Flamin preparation, as well as hydroalcoholic extracts of sandy immortelle flowers, were applied to the plate in the form of a strip 6 mm long. For the identification of the biological active compounds on chromatogramms were used a solution of 10 g / l of aminoethyl ether of diphenylboronic acid in methanol and a solution of 50 g / l of polyethylene glycol 400 in methanol. Viewing plates and aluminum chromatograms were carried out in