A STUDY OF ORGANIC ACIDS OBTAINED FROM DAHLIA NYMPHAEALES HERBA VARIETY KEN'S FLAME

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Introduction. Along with carbohydrates and phenolic compounds include organic acids, the most common substances contained in plants. They are involved in many life processes of plants, respiration, biosynthesis of pigments, fat, lignin, aromatic acids, amino acids and others. Qualitative and quantitative analysis of organic acids in different plant organs is changing factor. Organic acids influence involved in human metabolism, activating the secretion of bile and pancreatic juice, regulate the activity of salivary glands. In a comprehensive study materials advisable to investigate the composition of organic acids.

Aim. The purpose of our research studying of qualitative structure and the quantitative content of organic acids of Dahlia herba variety Ken's Flame.

Materials and methods. For the experiment we used herbs of Dahlia Ken's Flame cultivar dried to air-dry state. Beforehand studying of qualitative composition of organic acids carried out by means of paper chromatography with use of systems of solvents: I –butanol- formic acid-water (5:0.5:2), ethylacetate-formic acid-water (3:1:1) with standards of organic acids. Processing of chromatograms carried out 2% bromocresol green (yellow spots on a green background) and 0.04 % bromocresol blue (yellow spots on a dark blue background). The quantitative content of substances defined with the help chromatography-mass spectrometry was applied on a Agilent Technologies 6890.

Results and discussion. As a result of preliminary studying of organic acids on chromatograms 4 spots are revealed, 3 are identified as oxalic (I system – Rf 0,12; II system – Rf 0,80), malic (I system – Rf 0,65; II system – Rf 0,71) and citric (I system – Rf 0,55; II system – Rf 0,62) acids. As a result of research for the first time in herba Dahlias Nymphaeales variety of Ken's Flame 13 organic acids among which in the greatest numbers collected are revealed malic acid (4604,16 mg/kg) and citric acid (3341,53 mg/kg). Malonic acid was contained in an amount of 722,14 mg/kg, oxalic acid – 619,30 mg/kg. Also defined fumaric acid and vanillic acid were determined, their content was the equal (173,96 mg/kg та 177,33 mg/kg appropriately). In smaller quantities are founded 3-heksenic (30,18 mg/kg), phenyl acetic (29,98 mg/kg), benzoic (19,33 mg/kg), salicylic (18,93 mg/kg), lilac (19,23 mg/kg) acids.

Conclusions. Results of studying of organic acids in herba Dahlias variety of Ken's Flame confirm prospects of use of this type of raw materials for development of new medicinal forms with particular pharmacological effect.