

THE INVESTIGATION OF THE ORGANIC ACIDS LEAVES OF VACCINIUM VITIS-IDAEA

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The BAC from the leaves of *Vaccinium vitis-idaea* are used in traditional medicine to treat diseases of the kidneys and urinary tract, bottled stuff, drugs and dietary supplements (complex infusion Pankov, "Fitoren", "Milo -14", "Burdok -S", "Hlyukosyl", "Tsystofit forte") are produced.

The chemical composition of the phenolic compounds of the bilberry usual is described in the literature, but the composition of the organic acids isn't illustrated enough. The purpose of our study was to investigate the chemical composition of the organic acids of bilberry usual.

The study was carried out as follows: The internal standard (50 mg trydekan in hexane) and 1.0 ml methylating agent (14 % BCl_3 in methanol, Supelco № 3-3033) were added to 0.50 mg of the dried minced raw in Vial 2 ml. The mixture was kept in a sealed Vial 8 hours at 65°C . During this time the fatty oil is completely extracted from the plant material and the transesterification of fatty acids is happened. The reaction mixture was poured on the precipitate and diluted with 1 ml of distilled water. For methyl esters of the fatty acids 0.2 ml of methylene chloride was added to obtain the methyl esters of the fatty acids, the mixture was stirred for 1 hour and was subjected to the chromatography.

Introduction of 2 ml sample to the chromatographic column was carried out in a mode splitless (without flow distribution) which allows you to enter the sample without loss to the division and essentially 20 -fold increase in sensitivity chromatography. The speed of the sample - 1 ml/min, term - 0.2 min. The analysis of the methyl esters of the fatty acids was performed using chromatography-mass spectrometer 5973N/6890N MSD/DS Agilent Technologies (USA). Detector - mass spectrometer - quadruples, electron impact ionization method (EI), ionization energy 70 eV, was used to analyze the system for registering the full ion current. For the distribution using a capillary column HP-INNOWAX (30m \times 250mkm) was used for the distribution. Stationary phase is INNOWAX. Mobile phase is helium gas flow rate of 1 ml / min. The temperature of the heater input samples - 250°C . The temperature of the thermostat is programmable from 50 to 250° . The identification of the methyl esters of the acids was performed by calculating the equivalent length of the aliphatic chain (ECL); using data from mass spectra library NIST 05 and Willey 2007 with a total of more than 470,000 spectra, combined with the programs to identify AMDIS and NIST; retention time was compared with the time maintenance of standard compounds (Sigma).

We used the formula to calculate the quantitative determination of the components: $C=K1*K2*1000$ (mg / kg), where: $K1 = P1/P2$ ($P1$ a peak area of the substance, $P2$ – a standard peak area); $K2=50/M$ (50 – a mass of the internal standard, introduced in the sample, μg , M - a sample of the sample, mg), C - fatty acids content in the raw materials, mg/kg.

35 organic acids were found in the leaf. Their quantitative value was found. The dominant compounds are the oleic acid (20,06%), the palmitic acid (14,17%), the linoleic acid (19,75%), the linolenic acid (19,92%), the stearic acid (6,4%), the citric acid (4,49%), the levulinic acid (3,60%) and the p-coumaric acid (2,23%).