COMPARATIVE STUDY OF FRACTIONED POLYSACCHARID COMPLEXES AND MICROELEMENT COMPOUND *PRUNUS DOMESTICA* FRUITS

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Introduction. At present, the preparation complexes of biologically active substances and the development of drugs on their basis are an urgent task. A promising medicinal raw material for this is prunes. The first evidence of using of prunes dates back to the period of the Roman Empire. Prunes perfectly help in the early stages of any cardiovascular disease and are included in the diet of hypertensives. Prunes contain potassium one and a half times more than bananas. It improves the appearance and condition of the skin. Prunes are also a wonderful antibacterial. Prunes are also rich of B group vitamins, normalizes carbohydrate metabolism, increases body resistance to stressful situations.

Aim. The purpose of our work is isolation of polysaccharide complexes determination of the content of neutral sugars in them by spectrophotometry and study of elements of *Prunus domestica* fruits.

Materials and methods. The plant raw material was *Prunus domestica L.* fruits (family *Rosaceae*), harvested in Uzbekistan and dried.

Fractions of polysaccharides as water-soluble polysaccharides (WSPS), pectins and hemiceululoses (HC), types A and B were separated sequentially from the dried raw material with known method.

All polysaccharide complexes were dried in a drying oven to constant weight.

0.5 g of each obtained complex was hydrolysed with an acid hydrochloric acid concentrated for 2.5 hours. The solutions were cooled and quantitatively transferred with water purified to volumetric flasks with a capacity of 25.0 ml, adjusted to the mark with the same solvent and mixed. Then were taken 5 ml from each obtained solution and neutralized by the universal indicator paper first with a solution of 30% sodium hydroxide.

The neutralized solution was filtered through a paper filter, transferred quantitatively to a 25.0 ml volumetric flask, diluted to volume with water, and stirred.

Then 2-5 ml of the solution were taken from the each volumetric flasks into other 25.0 ml capacity volumetric flasks, 1.0 ml of 1% picric acid, 3.0 ml of 20% sodium carbonate were added in each flasks and heated at 100 ° C for 20 minutes. After cooling, the volume was adjusted to water and stirred. In parallel, under the same conditions, 2.0 ml of a standard sample (SS) of glucose was prepared. The

optical density of the test solution and glucose SS solution was measured on a Hewlett Packerd 8453 spectrophotometer at a wavelength of 463 nm in a cuvette with a layer thickness of 10 mm. A mixture consisting of 1.0 ml of 1% picric acid, 3 ml of 20% sodium carbonate and 1.0 ml of water was used as the reference solution.

The elemental composition was determined by atomic emission spectrophotometer at State Scientific Institution "Institute for Single Crystals" of NAS of Ukraine. To obtain spectra and their registration plate spectrograph DFS-8 with a diffraction grating 600 line / mm was used. Measuring intensities of lines in the spectra of analyzed samples and calibration samples was carried out by micro photometer MF-1.

Results and discussion. As a result of fractionation, we obtained WSPS - 8.04%, pectins-1 - 2.8%, pectins-2 - 2.96%, HC B - 2.5%, HC A - 1.75%.

By the results of the analysis, neutral sugars were the most in the WSPS - 61.5%. Their content in other complexes was: in pectins-1 - 19.21%, pectins-2 - 5.75%, HC B - 4.42%, HC A -1.29%. The most of the neutral sugars were determined for WSPS and pectins-1.

The second extraction of pectin showed that the pectic substances can be extracted completely by extracting consecutively at least two times. The fractions obtained differ in composition. The content of neutral sugars in the second extraction is 4 times less.

The study of the content of macro- and microelements is important for assessing the useful properties of raw materials, its further standardization and the development of quality control procedures. According to the analysis of the trace element composition, the most potassium content in fruits was found - 3100 μg / 100 g. The content of other trace elements was (μg / 100 g): calcium - 52, magnesium - 52, sodium - 31, phosphorus - 21, silicon - mg / 100 g, aluminum - 1.0, iron - 0.8, zinc - 0.6, Strontium-0.52, copper-0.41, manganese-0.26, molybdenum-0.05, lead-less than 0.03, nickel <0.03, Co <0.03, Cd <0.01, As <0.01, Hg <0.01. Potassium is a systemic electrolyte and is essential in coregulating ATP with sodium. Prune is an important source of this element. The presence and content other elements also play role for health. For example, copper maintains the normal blood composition, is contained in enzymes, participates in the delivery of oxygen to the cells. Zinc strengthens immunity, is important for growth, supports the hormonal background. Magnesium has an antispasmodic and antiplatelet effect. Also, our research has determined that the content of heavy metals in the raw materials in question does not exceed the norms established by the State Pharmacopoeia of Ukraine.

Conclusions. The data obtained shows that this raw material is valuable and can be used to create new medicines on its basis.