

BRIEF COMMUNICATIONS

WATER-SOLUBLE POLYSACCHARIDES OF THE FRUIT OF *Actinidia kolomicta*

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We have investigated the fruit of *Actinidia kolomicta* M. (*kolomicta actinidia*). It contains a number of biologically active substances [1] and is used in medicine and for the preparation of valuable food products [1, 2]. However, the chemical composition of the fruit of *kolomicta actinidia* has been studied inadequately, and its water-soluble polysaccharides (WSPSs) have not been considered previously.

We have studied the WSPSs and their monosaccharide compositions. The comminuted air-dry raw material (moisture content 10-11%) from the 1982 harvest, which had first been purified with ethanol (1:10) for 2 h, was extracted with a mixture of equal volumes of 0.25% solutions of ammonium oxalate and oxalic acid (1:20) for 1.5 h. The extract was filtered and evaporated and was treated with 96% ethanol (1.5 volumes). The precipitate of WSPSs was separated off and was washed with ethanol and with acetone. Its ash content was determined by the combustion of samples of the polysaccharide in the muffle furnace at 600°C, and the amount of uronic anhydride by the method of Karakeeva et al. [3]:

Fruit	Yield of WSPSs, %	Amount of uronic anhydride, %	Ash content, %
Unripe	7.8	86.7	6.2
Ripe	3.5	88.6	5.1

As we see, a larger amount of polysaccharides accumulates in the unripe fruit, and as they ripen the amount of WSPSs falls. No appreciable differences were found in the amounts of uronic anhydride and ash. The demineralization of the polysaccharides was carried out by reprecipitation with acidified ethanol, dialysis through a semipermeable membrane, and treatment with KU-2 (H⁺ form). The WSPSs consisted of white powder with a creamy tinge which were soluble in cold water. Their ash content was 0.4-0.5% and their uronic anhydride content 87.5-89.7%.

Hydrolysis of the polysaccharides, neutralization of the hydrolysates and the subsequent operations with them, were carried out as described previously [4]. The hydrolysates of the WSPSs were investigated by descending paper chromatography in the butan-1-ol-pyridine-water (6:4:3) system at 18-19.5°C for 66-70 h. The sugars were revealed with aniline phthalate at 105-110°C for 10 min. D-Galacturonic acid, D-galactose, D-glucose, L-arabinose, D-xylose, and L-rhamnose were detected in all the WSPSs.

The qualitative amounts of galactose, glucose, arabinose, xylose, and rhamnose were determined by the method of Zaitseva and Afanas'eva [5]: in the WSPSs of the unripe fruit they were present in a ratio of 9.7:2.5:4.0:0.8:1.0, and in the ripe fruit in a ratio 7.2:4.3:4.5:1.7:1.0. Of the sugar residues in the WSPSs, galactose predominated quantitatively, although in the ripe fruit its amount had decreased. The level of rhamnose in the polysaccharides remained unchanged and the amount of other monosaccharides increased during the ontogenesis of the fruit. The results obtained permit the polysaccharide of the fruit of the *kolomicta actinidia* to be assigned to the class of pectin substances.

LITERATURE CITED

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