

BRIEF COMMUNICATIONS

DYNAMICS OF THE ACCUMULATION OF POLYSACCHARIDES IN *Aronia melanocarpa*

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The isolation and accumulation of water-soluble polysaccharides in the ripe fruit of *Aronia melanocarpa* Elliot (black chokeberry) under the influence of trace elements has been reported previously.

We have studied the dynamics of the accumulation of water-soluble polysaccharides of the flowers, fruit, and leaves of the black chokeberry and their monosaccharide compositions.

The polysaccharides were extracted from the air-dry raw material collected in 1975-1977 in the "Kiritsy" sovkhoz, Spassk region, Ryazan' oblast' (moisture content of the flowers and leaves 9-10%, and of the fruit 10-12%) with hot water at 90-95°C (1:20) for 1.5 h. The extract was evaporated and precipitated with 96% ethanol. The precipitate was washed with ethanol and acetone and was dried in vacuum [1].

The ash content of analytical samples of the polysaccharides investigated was determined by calcination in a muffle furnace at 600°C. The amount of uronic anhydride in them was determined by complexometric titration [2].

The polysaccharides were hydrolyzed with 1 N H₂SO₄ for 9 h [3]. The hydrolysis products were investigated by descending paper chromatography in the butan-1-ol-pyridine-water (6:4:3) system. Galactose, glucose, arabinose, xylose, and rhamnose were found in all the polysaccharide samples.

Below we give the results of a study of the dynamics of the accumulation of the water-soluble polysaccharides of the flowers, fruit, and leaves of the black chokeberry:

Phase of development	Plant organ	Yield, %	Amt. of uronic anhydride, %	Ash content, %
Beginning of flowering	Flowers	7.06	86.6	18.10
	Leaves	6.89	87.3	18.20
Mass flowering	Flowers	7.98	89.1	18.12
	Leaves	7.11	89.1	18.25
End of flowering	Flowers	4.15	88.9	21.73
	Leaves	7.35	88.8	18.16
Green fruit	Fruit	8.52	88.6	9.90
	Leaves	7.34	88.4	18.16
Brown fruit	Fruit	6.08	90.9	7.88
	Leaves	7.50	85.2	20.80
Ripe fruit	Fruit	2.37	85.5	6.86
	Leaves	7.51	85.3	21.72
Mass fall of the leaves	Leaves	7.94	84.3	22.11

Thus, it has been established that the greatest accumulation of water-soluble polysaccharides is observed in the green fruit, in the flowers in the phase of mass flowering, and in the leaves in the phase of mass leaf-fall.

LITERATURE CITED

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