

BRIEF COMMUNICATIONS

POLYSACCHARIDES OF SAPONIN-BEARING PLANTS.

XIII. WATER-SOLUBLE POLYSACCHARIDES

OF *Caryophyllaceae* PLANTS

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In continuation of research on carbohydrates of saponin-bearing plants [1, 2], we isolated water-soluble polysaccharides (WSPS) from various organs of seven *Caryophyllaceae* species.

The WSPS were analyzed by a general method to find promising specimens for more detailed studies. Air-dried (ground) raw material was extracted with $\text{CHCl}_3\text{—CH}_3\text{OH}$ (1:1) to remove pigments and noncarbohydrate compounds. Then, exhaustive extraction with water extracted WSPS. The extracts were combined, precipitated by alcohol, and dried.

WSPS samples are amorphous powders with a cream tint and are very soluble in water to give nonviscous solutions. Aqueous solutions of WSPS give a negative reaction with iodine, indicating the absence of starch.

Fractions of WSPS isolated by hot water from seeds of *Oberna wollichiana* and *Silene viridiflora* give a color with iodine. Therefore, the polysaccharides contain starch.

The monosaccharide content of WSPS was determined by paper chromatography and GC after acid hydrolysis [3].

Table 1 shows that representatives of different species differ in WSPS content and monosaccharide composition.

Roots of *S. officinalis* and the aerial part of *P. conica* have the highest WSPS content; the aerial part of *D. uzbekistanica*, the lowest.

Hydrolysis of most WSPS gives as the main products galactose, glucose, and arabinose. Therefore, they are arabinoglucogalactan polysaccharides and have chemical and practical interest.

Thus, the discovery of plants that are WSPS sources among wild species growing in the Republic of Uzbekistan not only is important to science but also draws us closer to the production of economically valuable WSPS based on a domestic plant raw material.

TABLE 1. WSPS Content and Their Monosaccharide Composition

Plant	Organ	Yield, % of air-dried mass	Monosaccharide composition and ratio					
			Gal	Glc	Man	Xyl	Ara	Rha
<i>Dianthus uzbekistanicus</i> Lincz.	Aerial part	0.4	1.12	Tr.	Tr.	-	3.9	1.0
<i>Saponaria officinalis</i> L.	Roots	15.7	16.09	6.72	-	1.1	1.17	1.0
	Seeds	1.0	1.0	-	14	-	Tr.	Tr.
	Aerial part	1.1	3.15	10.2	2.88	1.8	2.4	1.0
<i>Oberna wallichiana</i> (Klotzsch.) Ikonn.	Seeds	1.5	Tr.	12.8	-	-	1.0	-
<i>Pleconax conica</i> (L.) Sourkova	Aerial part	11.3	16.4	33.5	1.8	1.0	5.55	2.55
<i>Pleconax conoidea</i> (L.) Sourkova	Aerial part	4.3	2.07	1.4	-	-	1.8	1.0
<i>Silene gustensis</i> (B. Fedtsch.) Schischk.	Aerial part	4.3	2.6	3	1.62	-	8.3	1.0
<i>Silene viridiflora</i> L.	Seeds	0.45	1.6	1.8	1.0	1.21	1.92	2.21

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