The products of the complete acid hydrolysis of the pectins were found to contain, in addition to the monosaccharide given above, a considerable amount of galacturonic acid, which was identified by PC and electrophoresis with a marker.

Thus, it may be concluded that the pectins of tobacco stems, rice straw, and kenaf chaff are similar to that from the beet.

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CARBOHYDRATES OF THE ROOTS OF Symphytum officinale

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Common comfrey (Symphytum officinale L.) is a popular agent of the folk and scientific medicines of many countries [1-3]. We have established previously [4] that water dissolves out from comfrey roots ~40% of extractive substances, the bulk of which consists of polysaccharides [5].

To isolate, purify, and analyze these compounds, use has been made of known methods [6, 7], which amount to the following: To eliminate substances of lipophilic nature the raw material is treated with chloroform, and then the product is fractionated according to the properties of its components; namely: the alcohol-soluble polysaccharides (SSPSs) with water; the pectin substances (PSs) with 0.5% oxalic acid solution; and the hemicelluloses (HCs) with 7% caustic potash solution.

After the elimination of noncarbohydrate components, the alcohol-soluble sugars were concentrated, precipitated with acetone, and dried in a vacuum desiccator over phosphorus pentoxide. Paper chromatography in the systems 1) butanol–pyridine–water (6:4:3) and 2) ethyl acetate–acetic acid–formic acid–water (18:3:1:4) revealed the presence of galactose, glucose, and unidentified reducing sugars. A solution of aniline pthalate was used as the revealing agent [8].

After precipitation with methanol, the WSPSs, PSs, and HCs were hydrolyzed with 10% sulfuric acid solution, and their monosaccharide compositions were investigated (%):

Polysaccharide fraction	Acid sugars	Protein	Ash	PSs	Monosaccharide composition
WSPSs	5.56	4.17	8.93	49.95	Glc, Gal, Ara, X*
PSs	23.68	3.30	14.44	76.46	Glc, Gal, Ara, X*
HCs	5.94	5.91	21.23	67.65	Glc, Gal, Ara, Xyl

*Unidentified sugar, presumably a methylpentose.

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Thus, the group of investigations of the carbohydrates of common confrey root that has been performed has permitted the isolation of the main fractions of polysaccharides and the determination of their composition, which is represented by glucose, galactose, arabinose, and xylose.

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FATTY ACID COMPOSITION OF THE NEUTRAL LIPIDS OF THE EPIGEAL PART OF Psoralea drupaceae

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Continuing a study of the chemical composition of various parts of plants of the family Leguminosae [1, 2], we have investigated the neutral lipids of the epigeal part of drupe scurf pea (fruit, leaves, and flowers) collected in 1987-1988 in Chimkent province.

The lipids were extracted from the air-dry raw material with petroleum ether (40-70°C). The main physicochemical constants of the lipids are given in Table 1.

The fatty-acid compositions of the neutral lipids (Table 2) in the form of methyl esters were analyzed by GLC on a Vyrukhrom instrument with a flame-ionization detector. GLC conditions: steel column 0.4 × 250 cm, filled with 15% of poly(ethylene succinate) on Chro-

TABLE 1. Physicochemical Constants of the Neutral Lipids

Constant	Plant organ		
	fruit (whole)	leaves	flowers
Yield, %	3,8	7,9	6,4
n_D^{20}	1,5330	1,5380	1,5370
d^{20}	0,916	0,923	0,920
Acid No., mg KOH/g	1,01	0,84	0,47
Saponification No., mg KOH/g	196	198	196
Iodine No., %	90,2	108,2	91,8
Unsaponifiable substances, %	2,30	4,90	4,15
Carotenoids, mg/kg	9,2	71,0	14,4
Tocopherols, mg/kg	50,0	46,0	24,0
Chlorophyll a, mg/kg	—	67,4	12,5
Chlorophyll b, mg/kg	—	51,2	8,3

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