

## GLYCOLS FROM MEDICINAL PLANT PROCESSING WASTES

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Levant wormwood and the opium poppy (*Artemisia cina* Berg. and *Papaver somniferum* L.) are widely distributed in Central Asia and are used in the pharmaceutical chemicals industry [1, 2]. The processing wastes contain considerable amounts of polysaccharides. We have made an attempt to obtain glycols with various compositions from these plant polysaccharides.

To eliminate undesirable impurities, the raw material was first treated with 10% H<sub>2</sub>SO<sub>4</sub> at a ratio of raw material to solvent of 1:10 for 2 h. Hydrolysis was carried out first with 2% HCl for 3 h and then with 80% H<sub>2</sub>SO<sub>4</sub> for 2 h. In the hydrolysates obtained, the reducing substances (RSs) were determined by the Makén-Shoorlya method, and individual monosaccharides and polyols by paper chromatography [3] on Filtrak FN-3, 11, 14 paper in the solvent system butanol–acetic acid–water (4:1:5). The substances were detected by spraying first with KIO<sub>4</sub> and then with a mixture of benzidine, acetone, and hydrochloric acid in a ratio of 10:2:1.

Below we give the amounts of monosaccharides in the hydrolysates (g per 100 g).

Raw material	Yield of RSs, % on the dry raw material	Glucose	Xylose	Mannose	Arabinose	Galactose
Levant wormwood	58.7	32.7	12.7	2.5	2.2	2.0
Opium poppy	36.3	25.2	6.7	1.0	5.5	3.2

After purification on ion-exchange resins, the hydrolysates obtained were subjected to hydrogenolysis under pressure [4] in a Vishnevskii autoclave in an atmosphere of hydrogen with vigorous stirring. Promoted systems were used as catalysts. Under the optimum conditions the yield of glycerol reached 40.5%, that of 1,2-propylene glycol 35.2%, and that of ethylene glycol 26.77%.

## REFERENCES

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