

THE INVESTIGATION OF TECHNOLOGICAL CONDITIONS OF PECTIN WITHDRAWAL FROM POTATO AND STUDY OF ITS STRUCTUREHanna Pastuh¹, Olena Hrabovska¹

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Pectin is one of the most common polysaccharides that can be found in plantstuff, such as fruits, vegetables, roots and tubers. A large amount of plantstuff after food processing makes waste, but it could serve as source of pectin substance. The ways of pectin withdrawal from potato are well known. However, after potato processing to make starch, a small amount of raw potato septum is left. It contains a large amount of biologically active substance, including pectin (contents 2-5,4 % according to raw substance amount), so the research of technological conditions of potato pectin withdrawal has great novelty.

The aim of our work is to define optimal technological conditions of pectin withdrawal from potato septum and investigate its properties.

Withdrawal of pectin is done with the help of consistent acid hydrolysis, extraction, separation of pectin, pectin deposition, drying and grinding of received pectin.

For conducting experiment we chose a three phases plan. Such changeable factors as temperature, duration of hydrolysis and contents hydrolyzing reagent (% HCl) were chosen. The effectiveness of process was controlled by amount of pectin output (%).

Pectin output and analytical characteristics of received pectin showed presence of methoxy, and free carboxyl groups and uronid component were determined by titration method.

Received samples of pectin were different depending various conditions of hydrolyzing: some of them during ethanol deposition floated on the surface, and others settled to the bottom in the form of flakes. This fact suggests a different molecular weight of the samples.

To study the structure of pectin isolated from potato septum, infrared spectroscopy was used. IR septum of potato pectin confirms the existence of functional (carboxyl, hydroxyl and ethereal-forming) groups in the molecules of the polysaccharide.

KEY WORDS: pectin, potato septum, hydrolyzing, carboxyl and acetyl groups