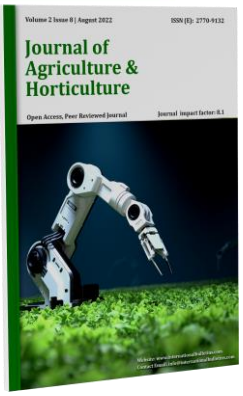

THE POSSIBILITY OF DEVELOPING PECTIN RAW MATERIALS RESERVES IN UZBEKISTAN AND THE CREATION OF MODERN PRODUCTION TECHNOLOGIES

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Abstract. This article highlights the peculiarities of pectin substances their quality and safety, their use on an industrial scale and the organization of their production system, the improvement of modern innovative technologies in the production of pectin and their effective use, the development of pectin raw material reserves.

Keywords: white cabbage, pectin, pectin production technology, pectin substance extraction, pectin industrial application.

INTRODUCTION AND JUSTIFICATION OF RESEARCH

In recent years, public interest in healthy and balanced food products has been steadily growing all over the world. In this regard, pectin from the composition of white cabbage is a source of many useful substances and is distinguished by their high content in comparison with similar commercial vegetables.

In Russia, Uzbekistan and many similar countries, in recent years, a pronounced trend has been growing, that is, the consumption of functional products in nutrition in order to prevent various diseases and strengthen the health of the population.

In the nomenclature of functional products nutrition, inulin and oligofructose, which are stored in food, occupy a large place, which is used throughout the world as a food product in dietary and diabetic nutrition, prebiotic, structure and flavor generation.

The above will be reflected in the following, according to the decree of the president of the Republic of Uzbekistan dated January 28, 2022, in the "new Uzbekistan development strategy for 2022-2026", aimed at improving the social protection and health system of the population, improving the health sector, and above all the comfort and quality of medical social, medical services to the population.

This development strategy aims to develop the extraction of pectin and its derivatives by carrying out and producing pure, natural products from them, allowing for a healthy diet and the longevity of the nation.

The development of the food industry in the Republic, expansion of the raw material base, creation of food stock, increasing its assortment, replenishing the domestic market with quality and safe food products and ensuring price stability, stabilizing prices for basic types of food products envisage measures for the formation of reserves and the development of rules for their use (making interventions on consumer markets), the possibility of

LITERATURE ANALYSIS AND RESEARCH METHODOLOGY

Pectin is a biomosalizable polysaccharide with specific biological activity that can exhibit different structures depending on the source or extraction method. Obtaining pectin from various industrial by-products manifests itself as a good option for evaluating agro-industrial residues by producing a quality product with high commercial value.

Pectin is a natural substance found in berries, fruits, white cabbage, as well as some vegetables, even cotton swabs and sunflower baskets. Pectins or pectin polysaccharides are a group of water-soluble carbohydrates found in the cell membranes and intercellular tissues of some plants.

Pectin substances are found in large quantities in the fruits of some plants (pears, quince, apricots, plums, apples). Pectin substances are calcium and magnesium salts of polygalacturonic acid, which are divided into protopectin and pectin. Protopectin is mainly deposited on the cell walls and converted into pectin, which dissolves during the ripening period of fruits and vegetables, which explains the softening of tissues. Due to the presence of pectin substances, sugar fruit syrups that boil and then cool are able to form jelly-like masses. This property of pectin substances is used in the production of marmalade, jam, jelly, lozenges.

In our republic, the creation of technologies for the production of pectin in the composition of white cabbage, as well as changing the character of a modern person, maintaining their ability to work, improving the quality of life of the population, are forcing many scientists of the country to look for different ways in solving this problem.

Secular experience shows that the direction in which this problem can be solved in one possible way is to ensure the quality and safety of specialized agriculture and food products, including the creation of technologies for the production of functional food.

Industrial pectins are given the food additive index and the numerical value E440. pectins belong to the class of thickeners, stabilizers, complex and gel-forming substances, and it is a moisture-retaining and clarifying agent, the efficient use of pectins also makes it possible to extend human life.

Traditional and non-traditional jelly products are prepared using pectin, for example, marmalade, layers of various pastries, including thermostable, cakes and pastries, juices are determined using pectin, jam and jam are baked, added as an addition to dough in the production of bread and bakery products.

Each large-scale food production creates its own unique product. To understand which pectin to use for such a product, it is necessary to study the specification from the manufacturer in order to read its composition and find out about its purpose.

The International Health Organization assesses that pectin and oligosaccharide are among the food and nutrient supplements that are exclusive to them and that they are primarily a prebiotic effect that is clearly and clearly expressed. The fact that pectin is an irreplaceable auxiliary agent in the absorption of calcium for children, as well as for elderly people, is currently reliably proven by scientists.

It is especially important to use pectin and oligosaccharose in diabetics. For this reason, it is necessary that pectin and oligosaccharose are definitely on the list of wellness foods.

ANALYSIS AND RESULTS

However, in Uzbekistan, pectin is not produced, therefore, the production of pectin and functional products, ensuring the national security of the population of the country associated with it, is an urgent problem.

The reason for the lack of development of this direction in Uzbekistan is the fact that the production of raw materials, clearly expressed in the state, does not have a policy in the field of industrial production of pectin and its derivatives, although the production of these products will be necessary.

GOST 34413-2018 pectin. Identification. Method of rapid detection of pectins. This standard applies to pectin (E440), a food additive used in food and non-food production, and defines a qualitative method for the rapid detection of pectin. (Figure 1).

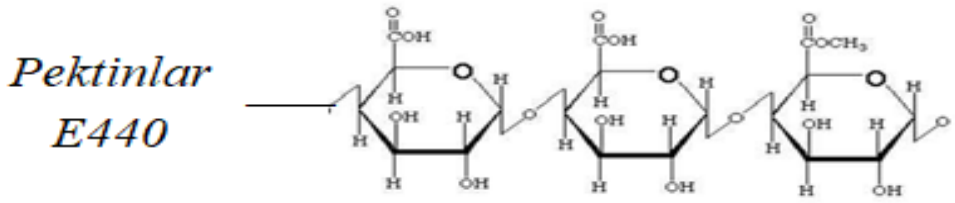

Figure 1. Pectin formula, which is applied to the food and feed additive.

Pectin is a complex polysaccharide, consisting mainly of methoxy esterified a, 1,4-galacturonic acid units. Pectin is an important polysaccharide used in the food industry, pharmaceutical, cosmetic and a number of other industries. When pectin is used in the pharmaceutical industry, it is used to reduce cholesterol levels in the blood and gastrointestinal disorders. (Figure 2).

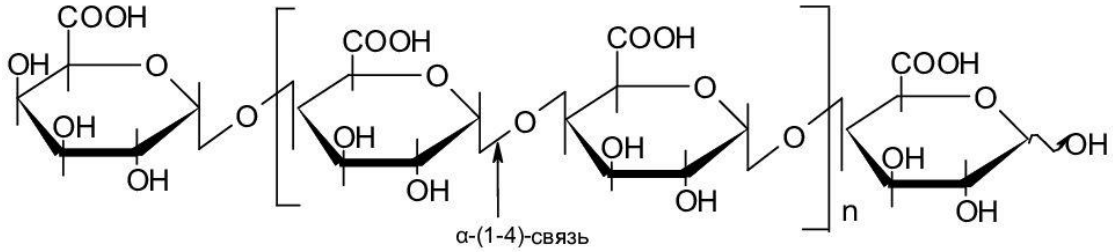

Figure 2. a, 1, 4-galacturonic dependence.

The malecular weight of pectin is the main parameter for gel formation. Pectin is sensitive to physical, physico-chemical or enzymatic changes. Pectin is a structurally acidic heteropolysaccharide found in the main and middle cell walls of terrestrial plants. Its main component is galacturonic acid, a sugar acid derived from galactose. It was first developed by Henry Braconnot in 1825 with a detached structure.

Pectin contains many different functional groups, allowing pectin to be used countless times in food, medicine, and biomedical applications.

CONCLUSIONS AND SUGGESTIONS

Today, the technological and functional properties of pectin allow it to be used as a food and feed additive and in the pharmaceutical and cosmetic industries. In our republic, the introduction of pectin production technology into production by domestic manufacturers is relevant on the basis of development. In Uzbekistan, white cabbage (Brassica oleracea var. capitata L.) of tezpishar varieties" first number Gribovsky 147"," Junyunskaya"," Navruz " are fogged. After 75-80 days after planting seedlings of the "Tashkent-10" and "cancer" varieties, karamboshi will be suitable for consumption. The varieties "judge of Uzbekistan", "Uzbekistan 133" and" Sharqiya-2 " are late-ripen, it is necessary to create modern technologies in the Republic in the cultivation of white cabbage from specialized agricultural products and in the extraction of pectin in its Re-production.

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