

## STUDY OF THE INFLUENCE OF STARCH ON THE QUALITY INDICATORS OF GLUTEN-FREE PASTA

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### Abstract

One of the priorities of the state policy of the Republic of Kazakhstan in the field of healthy nutrition of the population for the period up to 2022 is the creation of food products that are designed to meet the physiological needs of the human body in nutrients and energy. Pasta, bakery and flour confectionery products are one of the components of the diet of the population, however, with diseases associated with hereditary genesis (as for ex. celiac disease - gluten enteropathy), not everyone can eat such products. Celiac disease is a hereditary disease associated with digestive disorders caused by damage to the villi of the small intestine by foods that contain a certain protein - gliadin (gluten) in wheat and cereal proteins close to it: in rye - secalin, in barley - gordein, and in oats - avenin. For full physical development and improving the quality of life of people with these diseases, they need to follow a diet that is, eating gluten-free foods. Analysis of literature data, patent information, as well as domestic and foreign experience have shown the need to develop innovative technologies for the production of low-protein and gluten-free products, such as pasta, which would be more bioavailable for better assimilation of the product with impaired digestive function. The aim of this research is to develop gluten-free pasta based on buckwheat flour using corn starch as a structure-forming agent.

Materials for the study were: buckwheat flour of the Shortandinskaya coarse-grained variety, produced in the scientific and production center of the grain farm named after A.I.Barayev of the Republic of Kazakhstan, using corn starch of the highest grade, produced in the Zharkent Starch Plant of the Republic of Kazakhstan. In this article, we followed the various dosages of brewed starch in the amount of 10, 20, and 30% by weight of buckwheat flour. The quality of pasta was determined taking into account a set of consumer properties and the suitability of new products for food purposes in accordance with GOST 32908-2014 "Gluten-free pasta. General technical conditions". Determination of humidity, acidity, taste and smell, the condition of the products after cooking was determined in accordance with GOST 52377-2005 "Pasta products. Acceptance rules and methods for determining quality". Organoleptic parameters of pasta were studied in accordance with GOST 51865 - 2002 "Pasta products. General technical conditions".

Research results have shown that the use of raw crystallized starch in an amount of 30% of the weight of buckwheat flour allows you to get gluten-free pasta. Pre-gelatinization of corn starch with the addition of 20 - 30% in accordance with the weight of buckwheat flour gives positive results for the production of gluten-free pasta.

Thus, the presented analysis makes it possible to assess the state and directions of development of the pasta industry, to find new approaches to a more complete use of the local raw material base, to expand the range of products, including those with functional properties.

**Key words:** Pasta publications, Buckwheat flour, Gluten, Celiac disease, Gesture indicators.