



# ODESSA NATIONAL ACADEMY OF FOOD TECHNOLOGIES

## The technologies of bread products with improved quality and safety during production and storage through the usage of phyto-extracts

### Purpose and scope

New wheat bakery products, the technology of which involves the usage of phytomaterials with necessary technological properties and valuable physiological effects as an alternative to improvers of synthetic origin in order to solve the baking industry problems.

### Key features, the essence of the project

Scientifically grounded practical measures of solving the current problems of baking industry by using phyto-extracts are as follows: the regulation of the physical properties of the dough, the stabilization of the quality of bakery products in case of the flour strength fluctuation, increase of the product yield and enhancement of its protective properties by using hawthorn, dogrose and hop phyto-extracts; improvement of the accelerated technologies, ensuring the manufacture of high quality products, more resistant to staling and microbiological spoilage, while reducing the duration of the technological cycle by 25-40% as a result of enriching flour systems with scarce nutrients by using hawthorn, dogrose, hop and nettle phyto-extracts when activating pressed yeast (APF), as well as the stabilization of biotechnological parameters, the species composition of concentrated lactic acid sourdough (CLAS) by adding hop extracts with selective antimicrobial properties. The formulas and parameters of the technological process for accelerated and traditional technologies have been developed, taking into account possible deviations of the quality of raw materials and functional features of domestic baking plants and bakeries.

### Comparison with world analogues, the main advantages of the project

The investment attractiveness of these technologies lies in the efficiency of solving the problems of the industry, the possibility of replacing the improvers with phytomaterials, which also allows to impart the valuable physiological effects on the staple product. The economic effect is achieved by increasing the yield of bread, shortening the duration of production, reducing the returns from the trading network as a result of improved product quality, longer shelf-life, higher resistance to microbiological spoilage, the absence of potentially harmful to human health synthetic additives while increasing protective, strengthening properties.

### Intellectual property protection status

6 patents on new bakery products and their production technology have been obtained.

### Market demand

The market for the manufactured products is wide, since in Ukraine, as in the rest of the world, the vast majority of consumers (83.1% according to the statistic data) prefer breads without additives of synthetic origin, with a pronounced bread flavor and aroma, and the root cause of a refusal to buy bakery products is doubts about their safety.

### The state of project readiness

The technologies have undergone industrial testing and are ready for implementation.



Bread with water and whey hop extracts in the ADF and CLAS

Bread with water hawthorn extract in the APF and dough

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