

COLD EXTRUSION IN BREAD MAKING

V. Zarubina, a post graduate student
Scientific supervisor – Ph.D., Associate Prof.

Jelizaveta S. Smirnova

National University for Food Technologies

One of the main tasks in the food industry is to intensify technological processes and to provide finished products with the necessary quality under modern conditions of production. The use of extrusion processing helps to solve this problem.

Technology of preparation of food products using extrusion method appeared 50 years ago in our country and today continues to improve at a high rate. A wide usage of extrusion method in food production is predetermined by several advantages: high sterilizing effect, using a wide range of raw materials, enriching product with variety of additives (protein, fibre, vitamins, etc.), flexibility and continuity of the process, the small size of the extruder, low product cost, etc. Moreover, the extrusion technology allows to expand the range of products in bread making, create new types of improvers for the production of bakery goods. All mentioned above emphasizes the topicality and novelty of the problems under investigation.

The paper's objective is to investigate the influence of high pressure and high content of carbon dioxide in the extruder's fermenting chamber on the structural and mechanical properties of the dough and quality of finished products during biochemical, microbiological processes in the dough.

Advanced technologies of this method are widely used in bakery making, however they didn't find direct application in the technology of bread and rusk goods production.

The team of the chair "Machines and equipment for food production" at the National University for Food Technologies worked out a new, economically efficient machine-apparatus scheme of the rusk goods production using a cold extrusion process to simplify their traditional scheme. Such a technology in a fermenting-forming aggregate (extruder) combines ripening and all operations of dough processing including standing of dough. Ripening takes place in closed vessel under pressure that creates carbon dioxide, produced as a result of fermentation.

Thus, the new technologies on the basis of cold extrusion method can find a wide application in production of bread and rusk goods as compared with the traditional ones. Using extruded materials as improvers of the quality of bakery products as well as the application of extrusion equipment for the intensification of the technological process and creating of new products shows to be prospective and hopeful today.