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The publication contains materials of 89 International scientific conference of young scientists and students "Youth scientific achievements to the 21st century Nutrition problem solution".

It was considered the problems of improving existing and creating new energy and resource saving technologies for food production based on modern physical and chemical methods, the use of unconventional raw materials, modern technological and energy saving equipment, improve of efficiency of the enterprises, and also the students research work results for improve quality training of future professionals of the food industry.

The publication is intended for young scientists and researchers who are engaged in definite problems in the food science and industry.

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Видання містить матеріали 89 Міжнародної наукової конференції молодих учених, аспірантів і студентів "Наукові здобутки молоді – вирішенню проблем харчування людства у XXI столітті".

Розглянуто проблеми удосконалення існуючих та створення нових енерго- та ресурсоощадних технологій для виробництва харчових продуктів на основі сучасних фізико-хімічних методів, використання нетрадиційної сировини, новітнього технологічного та енергозберігаючого обладнання, підвищення ефективності діяльності підприємств, а також результати науково-дослідних робіт студентів з метою підвищення якості підготовки майбутніх фахівців харчової промисловості.

Розраховано на молодих науковців і дослідників, які займаються означеними проблемами у харчовій науці та промисловості.

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23. **Study of the structural and mechanical properties of the Armenian pita bread dough in the AL-130 line in order to improve its quality**

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Introduction. Research on lavash is rare and it is quite difficult to find them in free access, not to mention their relevance with the rapid development of scientific achievements, it can be argued that this topic is relevant.

Materials and methods. The research material is the dough for making pita bread enriched with food additives. The research method is numerical simulation. Analysis of the functionality of various software showed that the most common program for studying the movement of liquids and gases is the ANSYS program with CFD modules. Therefore, it was used for numerical modeling.

Results and discussion. The temperature regime for baking each type of product has its own characteristics, which are also influenced by the type and baking properties of flour, the recipe of the dough, the duration of the final proofing, the density of loading the oven tray, its design, etc. The duration of baking products of the same variety not only in different ovens, but also in the same ovens can be different, which is explained by different thermal and humidification regimes, as well as to some extent a change in the quality of raw materials and dough. Numerical simulation studies were carried out using Autodesk CFD software. 4 scenarios were created and calculated, in which such parameters as: density were changed; thermal conductivity coefficient; heat capacity.

Research data show that a significant temperature difference between pita bread and the heated air of the oven causes intensive heat transfer at the extreme parts of the workpiece and therefore high temperature at the extreme points.

The average temperatures of the longitudinal and transverse sections have a difference of less than 1%. The biggest difference is at 5 s of the process, which emphasizes that the beginning of the process is the most intensive.

The course of the preparation process with the formulation to which gum was added occurs in the same way as with the control sample, with the difference that the temperature rises faster compared to the original formulation, on average, the temperature difference is 2.95°C. This indicates that it is necessary to adjust the temperature or the time of the workpiece in the furnace, that is, to increase the speed of movement of the workpiece.

The results obtained from the study of the longitudinal section of the blank to which the gum was added indicate that more uniform heating occurs. The results of baking the entire sample with the recipe to which wheat bran was added indicate that there are no significant differences in temperature during the process between the control sample and the one to which wheat bran is added, but the final temperature differs by 2.6 °C.

Conclusions The obtained results shed light on the difference in the pita bread baking process, between the original recipe and recipes made from wheat-oat flour and with the addition of additives such as wheat bran and gum. The need to adjust process parameters, such as temperature or time in the oven, is identified.

Literature.

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