

Таким образом, годовой экономический эффект от внедрения технологии двухстадийного измельчения зерна в комбикормовом цеху МРУП «Агрокомбинат «Ждановичи» составляет более 10,5 тысяч рублей. Срок окупаемости дополнительных капитальных вложений составляет 1,34 года. Удельный экономический эффект от внедрения двухстадийного измельчения зерна составляет 0,518 руб./т.

Заключение

Для оценки фактического экономического эффекта от использования способа двухстадийного измельчения зерна проведена его производственная проверка на базе Минского районного унитарного предприятия «Агрокомбинат «Ждановичи».

Производственная проверка двухстадийного измельчения зерна и сопоставление функциональных показателей работы с одностадийным молотковым измельчением показали снижение удельных энергозатрат с 10,5 до 5,8 кВт ч/т, что составляет 44,7 %, при этом количество требуемой фракции в измельченном зерне (выражаемое через показатель качества измельчения) повысилось с 71,2 % до 81,9%, что составляет 10,7%.

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POTENTIAL CANCER PREVENTIVE FOOD-RELATED COMPONENTS

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Cancer is a growing health challenge around the world particularly with increasing urbanization and the subsequent changes in environmental conditions. Cancer is designated as a lifestyle disease because of its association with types of food, nutrition, and body weight. Preclinical and clinical evidences indicate that dietary factors can contribute to human cancer risk and as such many of the cancers common in the developing countries and the western world [2]. Foods causing cancer are refined sugar, canned foods, hydrogenated oils, genetically modified foods, salted, pickled and smoked foods; farmed fish, grilled red meat; soda and carbonated beverages, and white flour. Not only may food components be associated with cancer risk, but cooking methods, the direct impact of food on the human gastrointestinal mucosa, and individual susceptibility to dietary carcinogens can significantly increase cancer risk [1].

American Institute of Cancer Research (AICR) report found evidence that cancer survivors should follow the plant-based diet and physical activity recommendations for reducing risk of cancer. The use of naturally occurring agents with antioxidant and anti-inflammatory properties have been projected globally as rational and pragmatic approach to interfere with the multi-stage processes involved in carcinogenesis [4].

Having a healthy weight creates a biochemical status or “anticancer” environment that discourages cancer growth. A healthy diet rich in whole grains, beans, and a variety of vegetables,

fruits; and low in red and processed meat can fight cancer. This type of diet provides vitamins, minerals, and naturally occurring phytochemicals and defends the body against cancer and other diseases. Recently nutraceuticals have emerged as potential cancer preventive natural sources from food that may lead to reduced cell damage, reduced necrosis, cell proliferation. However, the reduced cancer incidence due to phytochemicals and nutraceuticals seems to be hype [3].

The specific role of dietary components, including supplements and chemoprevention, in cancer prevention/protection remains unclear. General recommendations include maintaining a healthy weight, eating fruits and vegetables, whole grains, and limiting consumption of refined carbohydrates and processes and red meats. Potential cancer preventive food-related components should be further researched in clinical trials on different models for their effectiveness and toxicological documentation. Furthermore, extensive research work should be carried out on these components to evaluate their possible applications, toxicological and particular genotoxic profile against a wide range of cancer in both either in-vitro or in-vivo.

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MODELING OF THE PROCESS OF KNEADING THE YEAST DOUGH BY MODERN WORKING ELEMENT

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During the viscous flow, the deformation is proportional to the stress imposed by Newton's law, and after the removal of the load is not restored. Plastic deformation is created under stress that exceeds a certain limit value (the boundary of flowability), to which the material behaves as visco-elastic. During mixing flour with water, the components of the flour form a hydrated bonded mass - a dough. Hydrated medium, which is a dough, the presence in this mass of introduced fermentable microflora is triggered by a system of complex biochemical, microbiological, colloidal and other processes.

The cam working elements are becoming more widely used, but almost non-exploratory, requiring in-depth study and detailed analysis. By way of a critical analysis of literary sources on the subject of the process of mixing, the directions of development and improvement of this issue were identified, thus a deep and systematic study requires the problem of qualitative and intensive mixing of yeast dough in continuous-dough machines of continuous action.

To study the shear stress, four basic positions of the cam's working elements were selected, then these provisions are repeated on the shaft of the working element.

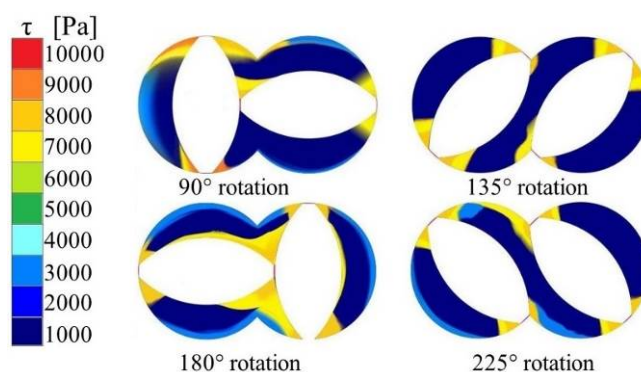


Figure 1 – Change in the shear stress $[\tau, \text{Pa}]$ in the mist chamber in the process of mixing the yeast dough by the cam operating elements