

**TECHNOLOGY OF FUNCTIONAL AND DIETARY MEAT PRODUCTS
PRODUCTION: PERSPECTIVES FOR HEALTHY NUTRITION****Amangeldiyeva Albina Salamat qizi**

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Summary. The growing awareness of healthy lifestyles and balanced nutrition has significantly increased consumer demand for functional and dietary food products. Meat products, traditionally perceived as high-fat and high-salt foods, are now being reformulated to meet modern nutritional requirements. This article examines the technological aspects of producing functional and dietary meat products enriched with biologically active components and reduced levels of fat, salt, and harmful additives. The study analyzes the use of plant-based ingredients, probiotics, dietary fibers, and natural antioxidants in meat processing. Special attention is given to technological challenges, quality characteristics, safety issues, and the role of functional meat products in promoting public health. The article emphasizes the importance of innovation in developing competitive and health-oriented meat products for the future food industry.

Key words: Functional meat products, dietary meat products, healthy nutrition, food biotechnology, low-fat meat, probiotics, natural additives, meat technology.

Rezyume. Sog'lom turmush tarzi va muvozanatli ovqatlanishga bo'lgan qiziqishning ortib borishi funksional va parhezboq oziq-ovqat mahsulotlariga iste'molchilar talabini sezilarli darajada oshirdi. An'anaviy ravishda yog'i va tuzi ko'p mahsulotlar sifatida qaralgan go'sht mahsulotlari bugungi kunda zamonaviy ovqatlanish talablariga mos ravishda qayta ishlab chiqilmoqda. Ushbu maqolada biologik faol komponentlar bilan boyitilgan hamda yog', tuz va zararli qo'shimchalari kamaytirilgan funksional va parhezboq go'sht mahsulotlarini ishlab chiqarishning texnologik jihatlari ko'rib chiqiladi. Tadqiqotda go'shtni qayta ishlash jarayonida o'simlik asosidagi ingredientlar, probiotiklar, oziq tolalari va tabiiy antioksidantlardan foydalanish tahlil qilinadi. Shuningdek, texnologik muammolar, sifat ko'rsatkichlari, xavfsizlik masalalari hamda funksional go'sht mahsulotlarining aholi salomatligini mustahkamlashdagi o'rni alohida yoritiladi. Maqolada kelajak oziq-ovqat sanoati uchun raqobatbardosh va sog'lomlashtiruvchi go'sht mahsulotlarini yaratishda innovatsiyalarning muhim ahamiyatga ega ekanligi ta'kidlanadi.

Kalit so'zlar: Funktsional go'sht mahsulotlari, dietik go'sht mahsulotlari, sog'lom ovqatlanish, oziq-ovqat biotexnologiyasi, kam yog'li go'sht, probiotiklar, tabiiy qo'shimchalar, go'sht texnologiyasi.

Резюме. Растущее осознание важности здорового образа жизни и сбалансированного питания значительно повысило потребительский спрос на функциональные и диетические пищевые продукты. Мясные продукты, традиционно воспринимаемые как продукты с высоким содержанием жира и соли, в настоящее время перерабатываются и модифицируются в соответствии с современными требованиями к питанию. В данной статье рассматриваются технологические аспекты производства функциональных и диетических мясных продуктов, обогащённых биологически активными компонентами и с пониженным содержанием жира, соли и вредных добавок.

В исследовании анализируется использование растительных ингредиентов, пробиотиков, пищевых волокон и натуральных антиоксидантов в мясопереработке.

Особое внимание уделяется технологическим трудностям, показателям качества, вопросам безопасности, а также роли функциональных мясных продуктов в укреплении общественного здоровья. В статье подчёркивается важность инноваций в разработке конкурентоспособных и ориентированных на здоровье мясных продуктов для будущей пищевой промышленности.

Ключевые слова: *Функциональные мясные продукты, диетические мясные продукты, здоровое питание, пищевая биотехнология, низкожирное мясо, пробиотики, натуральные добавки, технология мясных продуктов.*

In recent decades, the concept of healthy nutrition has become a central issue in food science and technology. Changes in lifestyle, increased incidence of cardiovascular diseases, obesity, and metabolic disorders have forced consumers to pay greater attention to the nutritional value of food products. As a result, the food industry is actively developing functional and dietary products designed to improve health and prevent diseases.

Meat products are an important source of high-quality protein, essential amino acids, vitamins, and minerals. However, traditional meat products often contain excessive amounts of fat, salt, and preservatives, which may negatively affect human health. Therefore, the development of functional and dietary meat products has become a priority direction in modern meat processing technology.

Concept of Functional and Dietary Meat Products

Functional meat products are defined as foods that provide health benefits beyond basic nutrition due to the presence of biologically active components. Dietary meat products are characterized by reduced energy value, lower fat and sodium content, and improved digestibility.

These products are intended for specific population groups, including children, elderly people, athletes, and individuals following therapeutic or preventive diets.

The production of such products requires the application of advanced technological approaches that ensure both high nutritional value and acceptable sensory properties.

Technological Approaches in Production

One of the main strategies in producing functional and dietary meat products is fat reduction and substitution. Animal fat is partially replaced with vegetable oils, protein emulsions, or dietary fibers, which helps lower cholesterol levels while maintaining product texture and juiciness.

Salt reduction technologies are also widely applied, as excessive sodium intake is associated with hypertension and cardiovascular diseases. Natural flavor enhancers, potassium-based salts, and spices are used to preserve taste while reducing sodium content.

The incorporation of plant-based ingredients, such as soy protein, legumes, cereals, and vegetable fibers, enhances the functional properties of meat products. These ingredients improve water-holding capacity, texture, and nutritional balance.

Biotechnological methods, including the use of probiotics and starter cultures, play a significant role in functional meat product development. Probiotics improve gut health, enhance immune response, and contribute to product safety through competitive inhibition of harmful microorganisms.

Quality and Safety Considerations

Maintaining high quality and safety standards is essential in functional meat production.

The addition of natural antioxidants, such as plant extracts and vitamins, helps prevent lipid oxidation and extends shelf life. At the same time, strict control of raw materials, processing conditions, and hygiene is required to ensure microbiological safety.

International quality management systems, such as HACCP and ISO standards, are crucial for monitoring critical control points and guaranteeing consumer safety.

Role in Healthy Nutrition and Future Prospects

Functional and dietary meat products play an important role in promoting balanced diets and improving public health. Their regular consumption can help reduce the risk of chronic diseases and support overall well-being.

Future developments in this field are expected to focus on clean-label products, personalized nutrition, and the use of natural and sustainable ingredients. Continuous research and technological innovation will further enhance the nutritional and functional value of meat products. Functional and dietary meat products play a significant role in promoting healthy nutrition by providing essential nutrients while minimizing potential health risks associated with traditional meat consumption.

These products are designed to deliver high-quality proteins, essential amino acids, iron, zinc, and B-group vitamins in forms that are more compatible with modern dietary recommendations. By reducing fat, salt, and cholesterol content, functional meat products contribute to the prevention of cardiovascular diseases, obesity, and metabolic disorders.

The inclusion of biologically active components such as dietary fibers, probiotics, plant proteins, and natural antioxidants enhances the physiological benefits of meat products. Dietary fibers improve digestive health and help regulate blood glucose levels, while probiotics support gut microbiota balance and strengthen the immune system. Natural antioxidants reduce oxidative stress in the human body and improve the overall nutritional profile of meat-based foods. As a result, functional meat products are increasingly recognized as part of balanced and preventive nutrition strategies.

From a public health perspective, functional and dietary meat products offer an opportunity to adapt traditional eating habits to contemporary health guidelines without eliminating meat from the diet. These products are particularly beneficial for specific population groups, including children, elderly individuals, athletes, and people with special dietary needs.

Their controlled composition allows for better portion management and nutrient intake optimization.

Looking to the future, the development of functional meat products is expected to focus on personalized nutrition, sustainability, and clean-label formulations. Advances in food biotechnology, ingredient innovation, and digital processing technologies will enable manufacturers to design products tailored to individual health conditions and lifestyle requirements.

The use of natural, minimally processed ingredients and environmentally friendly production methods will further increase consumer acceptance and trust.

In conclusion, functional and dietary meat products represent a promising direction for the meat processing industry.

Their role in healthy nutrition will continue to expand as scientific research, technological innovation, and consumer awareness grow, positioning these products as key components of future food systems.

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