CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.3368095

Available online at: http://www.iajps.com ***Research Article***

PROSPECTS FOR THE DEVELOPMENT OF NEW TYPES OF MEAT PRODUCTS USING BEEF WITH MODIFIED FATTY ACID COMPOSITION

Ruslan Omarov[1,2], Ivan Gorlov[1], Marina Slozhenkina[1], Elena Anisimova[1], Natalia Mosolova[1], Sergei Shlykov[2].

[1]Volga Research Institute of Production & Processing of Meat & Dairy Products, Marshala Rokossovskogo str. 6, Volgograd 400131, Russia., [2]Stavropol State Agrarian University, Zootekhnicheskiy lane, 12, Stavropol 355017, Russia.

Article Received: June 2019 **Accepted:** July 2019 **Published:** August 2019

Abstract:

The article presents the rationale for the prospects of expanding the range of functional meat products through the use of modified meat raw materials. A proposal is made to develop a technology for the production of beef with a modified fatty acid composition.

Keywords: *beef, functional nutrition, fatty acids, herbal fattening.*

Corresponding author:

Ruslan Omarov,

Stavropol State Agrarian University, Zootekhnicheskiy lane, 12, Stavropol 355017, Russia. E-mail: doooctor@yandex.ru

QR code

Please cite this article in press Ruslan Omarov et al., ***Prospects For The Development Of New Types Of Meat Products Using Beef With Modified Fatty Acid Composition.,*** *Indo Am. J. P. Sci, 2019; 06(08).*

INTRODUCTION:

Preservation and strengthening of people's health is the most important task of any civilized state. Currently, it has been scientifically established that the health of the nation is only 8-12% dependent on the health care system, while socio-economic conditions, including diets, determine the state of health by 52-55% [3, 4].

Extremely alarming indicators of the current state of natural, food and social ecology include: global climate change and huge losses of food resources; a rapid increase in the number of sick people; the appearance of extremely dangerous previously unknown human diseases; ignoring the principles of biologization, greening, naturalization and rational use of natural resources; deterioration in the quality of food products, often containing harmful substances that do not meet the requirements of usefulness and safety for humans. As you know, in the last century, the number of factors that negatively affect people's health has significantly increased. Poor food and side effects when using a number of drugs dramatically worsen people's health and sometimes lead to death. The critical situation in the food sector requires the use of new approaches based on scientifically sound biological principles, progressive and environmentally friendly technologies. The formation of a healthy type of nutrition will require the development of fundamental and applied scientific research on biomedical assessment, the safety of new food sources and ingredients, the introduction of innovative technologies, including bio and nanotechnology, the technology of organic production of food products and food raw materials, and the increase in the production of new enriched, dietary and functional foods.

The results of regular mass surveys of the actual nutrition of the population indicate significant violations in the diet, which include a lack of consumption of vitamins, micro and macro elements, complete animal protein, polyunsaturated fatty acids, and dietary fiber.

It is not possible to solve the indicated problems by increasing the diet density, since this leads to an increase in the number of calories consumed, which is unacceptable with insufficient physical activity and physical inactivity [4]. Therefore, it is necessary to develop and master new technologies and formulations of food products.

In this regard, functional food products are becoming increasingly important, which include mass consumption products that look like traditional food and are intended to be used as part of a normal diet, but unlike mass consumption products, contain functional ingredients that have a positive effect on individual body functions or the body as a whole.

The main distinguishing features of functional foods are:

- nutritional value;
- taste qualities;
- physiological effects on the body.

These requirements should apply to the product as a whole, and not to the individual ingredients in its composition.

Functional drinks - 48%, bakery products - 27% and dairy products - 6% managed to gain serious authority in the market. At the same time, functional meat products until recently played a secondary role. This is due to the fact that meat products are traditionally considered to be difficult to digest, fatty foods, while the modern development vector is aimed at creating easily digestible products with low fat content [6, 7]. But recently, scientists working in the direction of creating new functional products have paid attention to meat products. This is due to the fact that meat itself is a high-quality raw material, and its enrichment gives new properties to the product. This is what modern marketing concepts are based on.

In the diet, meat is the main source of complete animal proteins, vitamins and minerals, in particular iron, zinc, phosphorus, vitamin B_{12} and folic acid [1]. Many of the substances that make up meat are either absent from other foods or have poor bioavailability. The fundamental prerequisite for considering meat as a raw material for functional products comes from the fact that it initially contains numerous bioactive substances, for example, linoleic acid with unsaturated conjugated bonds, carnosine, anserine, L-carnosine, glutathione, taurine or creatine.

Therefore, the problem of creating a positive image of functional meat products is to link the undoubted nutritional value of meat and meat products with their health benefits.

However, the marketing of meat functional products is negatively affected by the image of meat, associated, on the one hand, with the prevailing opinion about the harmful effects of fats on human health, and on the other, with prejudices (although this has never been proved by anyone) that meat contributes to the development of cancer. Therefore, the problem of creating a positive image of functional meat products is to link the undoubted nutritional value of meat and meat products with their health benefits. There are currently three main areas of

development. 1. By directional selection or technological and technical measures during the rearing of animals, the characteristics of meat intended for use as raw material are changed. 2. During the processing of meat, they reduce the content of those components that make up the meat that appear to be negative (in particular, degreasing). 3. Additionally added functional ingredients. The fundamental premise of considering meat as a raw material for functional products comes from the fact that the composition of meat and other raw materials of animal origin initially includes numerous bioactive substances, for example linoleic acid with unsaturated conjugated bonds, carnosine, anserine, L-carnosine, glutathione, taurine or creatine. From the point of view of possible functional properties, it is interesting that the level of content of these substances can be influenced both by breeding animals and by using their fattening. For example, poultry meat as a result of special feeding may contain such an amount of selenium, linoleic acid with unsaturated conjugated bonds and omega-3-unsaturated fatty acids, which in itself raw material acquires the properties of functional products. But to balance the composition, an increase in certain substances must be supplemented by the introduction of other components into the raw materials.

CONCLUSION:

Marbled beef is one of the best natural dietary products in the world known today. The chemical composition of marbled beef includes choline, which has a membrane-protective (protects cell membranes from destruction and damage), anti-atherosclerotic (lowers blood cholesterol), nootropic, antidepressant, soothing effect [7]. Choline improves metabolism in nerve tissue, prevents the formation of gallstones, normalizes fat metabolism and helps to reduce weight. Marbled beef is a rich source of vitamin B_{12} and easily digestible iron. Beef fat, in comparison with other animal fats, is characterized by a high content of saturated fatty acids, and unsaturated fatty acids are represented mainly by the omega-6 complex and a small amount of omega-3. It is important to note that omega-3 acid molecules have a unique ability to increase the elasticity of cell membranes, strengthen the walls of blood vessels and make them flexible. Omega-3 acids dilute the blood of humans and animals, as does plant sap. Therefore, they are well absorbed by the body. These acids make it possible for our heart to beat with the right rhythm, to circulate blood without delay, to see the eyes, and make decisions to the brain faster. An increase in the proportion of cereals in the diet of cattle has changed the balance of polyunsaturated fatty acids in animal meat in the direction of increasing the complex of omega-6 fatty acids. Fatty acids of the omega-6 complex are not harmful, they fulfill their important function in the body, but should be consumed in the proper ratio with the acids of the omega-3 complex. Some scientists believe that an excess of omega-6 fatty acids in the diet can provoke cardiovascular diseases, strokes, arthritis, asthma, diabetes, headaches and metastases of neoplasms. This makes it relevant to conduct research to find ways to reduce the content of saturated fatty acids and increase the content of omega-3 fatty acids in beef by changing the composition of the consumed feed [2]. The main source of these fatty acids for animals is the vegetation of pastures and hayfields, which indicates the feasibility of developing measures to improve and rational use of natural and seeded forage lands. For this, it is necessary to experimentally study the processes of formation of the set properties of meat products at all stages of the trophic chain - from raising animals to producing the finished product.

ACKNOWLEDGEMENT:

The authors are grateful to the Russian Science Foundation for the financial support in the implementation of this research according to the scientific project # 15-16-10000, NIIMMP.

REFERENCES:

1. Bukenhuskes G. The concept of the development of functional meat products. Meat technology 2011; #11: 30-34
2. http://beef-premium.ru/-grass-fed_beef
3. Nesterenko A.A., Keniyz N.I. Nagarekawa D.K. Prediction of rheological characteristics of sausages. Polythematic network electronic scientific journal of Kuban state agrarian University, 2015; #107: 289-301.
4. Gorlov I.F., Omarov R.S., Slozhenkina M.I., Zlobina E.Yu., Mosolova N.I., Shlykov S.N. Assessment of the influence of herb fattening on the productivity and quality of beef cattle meat. Research Journal of Pharmaceutical, Biological and Chemical Sciences, 2018; 9(4):1088-1094.
5. Omarov R.S., Zakotin V.E., Marynich A.P. and others. Studying the mechanism of formation the beef' fatty acids composition by grass feeding. Research journal of pharmaceutical biological and chemical sciences, 2018; 9(2): 901-906.
6. Trukhachev V.I., Skripkin V.S., Verevkina M.N. and others. The History of the Development of Hyper Immune's Serums and Their Practical Application. Research journal of pharmaceutical biological and chemical sciences, 2016; 7(2): 1054-1059.
7. Omarov Ruslan, Gorlov Ivan, Slozhenkina Marina, Zlobina Elena, Mosolova Natalia,

Shlykov Sergei. Effect of use in the diet of α-linoleic and linoleic acids on the development of atherosclerosis in experimental mice. Indo Am. J. P. Sci, 2019; 06(03).