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The Influence of the Nutritional Value of Flour Confectionery Products on the Human Body

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Abstract: *The problem of food resources, providing the population with healthy and affordable food for all social strata of the population throughout the world is becoming increasingly important. The share of functional products on the domestic market is currently not yet large, but this segment is developing dynamically and is very promising as a means of prevention, early correction and prevention of various diseases. In recent years, consistent reforms have been implemented in the republic on the rational use of natural resources. Particular attention is paid to plants that are most adapted to cultivation on marginal lands, tolerate drought well and begin to bear fruit quickly.*

Keywords: *Problem of food, quantity fraction, functioning of the body, organic acids, enzyme system, amino acid, diseases of civilization.*

To maintain health for many years, a person must monitor the diversity of his diet and follow a nutritional regimen. Nowadays, almost everyone experiences deficiencies or excesses of individual nutrients or their combinations. This is due to the fact that with an increase in the level of quality of life, a person has a lot of benefits at his disposal: modern technology, computers, cars, an elevator, hot water, etc. All this reduces physical activity, and therefore energy consumption, to nothing. As a result, to maintain body weight and prevent obesity, a person tends to eat less, which means he receives fewer micronutrients from food. In addition, a person receives the bulk of his energy from consumed fats and carbohydrates. Studies have shown that a person gets the bulk of carbohydrates and fats by eating flour confectionery products. Confectionery products represent joy, goodness, positive emotions, and this is the main component of any food. The presence of sweets is necessary in our diet, but their excess consumption can harm the body. Sugar alone, or in combination with confectionery products, provides approximately 15% of the calories and 24% of the carbohydrates in the average person's diet. Flour confectionery products predominantly contain large amounts of sugar, fat and eggs. Therefore, they are characterized by high nutritional value and are mainly a source of easily digestible carbohydrates, fats, and proteins. It should be remembered that excessive consumption of confectionery products and sugar leads to obesity in 25% of cases, diabetes in 13%, and cardiovascular diseases in 10% of cases. And half of the deaths are caused by cardiovascular diseases. flour confectionery nutritional value The purpose of this course work is to study the main characteristics of the nutritional value of flour confectionery products, as well as to analyze their importance in human nutrition. To achieve the goal, the following tasks were set: 1) Study of the chemical composition of flour confectionery products; 2) Study of the nutritional value of flour confectionery

products and its components;) Study and presentation of ways to increase the nutritional value of flour confectionery products. The main literary sources analyzed in the course work are: Textbook "New in the merchandising of confectionery products" by E.V. Dubovik and the Educational and Methodological Manual "Commodity Research and Expertise of Confectionery Products" by E.V. Dubovik. In this work, the method of synthesis and analysis, the method of induction and deduction, the comparison method, and the mathematical method were used.

Chemical composition of flour confectionery products. Water plays an important role in food products, as it determines the consistency and structure of the product, and its interaction with the components present determines the stability of the product during storage. Total humidity indicates the amount of moisture in the product, but this indicator does not characterize its involvement in chemical and biological changes in the product. All ongoing processes are characterized by the amount of bound and free water in the product. Free water is water present in the form of liquid droplets on the surface or in the mass of the product. It is not connected or has a very weak physical and mechanical connection with the product particles. It retains all the properties of pure water: mobility, the ability to be a solvent of crystalline substances (for example, sucrose, salts, etc.) and to freeze at a temperature of 0 °C. [16, p.80] Products containing free and weakly bound water are damp to the touch and are usually poorly stored. Such water is contained in cell sap, between cells, and also on the surface of the product. It is easily removed when dried. This is an ideal environment for various biochemical, chemical and microbiological reactions to occur, resulting in food spoilage. Therefore, it is also called active water. Bound water interacts closely with the components of the product - proteins, lipids and carbohydrates - due to the presence of physical and chemical bonds.

Located in microcapillaries, adsorbed by intracellular systems, retained by colloids of proteins and carbohydrates. It does not freeze at low temperatures (-40 and below), and it cannot serve as a solvent for added substances. There are moisture bound physically, physico-chemically and chemically. [16, p.80] Physically bound water includes wetting moisture, which is in the form of a film on the surface of the product, and moisture contained in macrocapillaries (capillaries with a diameter of more than 10⁻⁵ cm) and microcapillaries (diameter less than 10⁻⁵ cm). Physically bound water differs slightly from free water in its properties and influence on the quality of food products. A common form of water bonding in most foods is a physical-chemical bond. It can be adsorption bound and osmotically absorbed. [3, p.16] The adsorption connection is that dipole water molecules are oriented and held by molecular forces on the surface of particles of a substance (or intracellular formations, for example, starch grains) at the site of active centers. Such water molecules lose their solvent properties and cannot easily move and take part in chemical reactions. Products containing adsorbed moisture are dry to the touch and practically do not increase in volume. Osmotically bound water, or swelling moisture, is found within and between the cells of the material and is retained by osmotic forces. Osmotic moisture is contained in gels, into the cells of which it enters due to selective diffusion (osmosis). The cell walls are a semi-permeable membrane, so water can easily enter the cell, but it is not able to pass through the cell wall in the opposite direction. The transition of free moisture into osmotically bound moisture causes a significant increase in body volume. Moisture bound by a physical-chemical bond differs from free moisture: it has a higher density (1.2 - 1.7), completely freezes at a very low temperature (-71 oC), is not able to dissolve crystalline substances, and is not a favorable environment for the development of microflora and enzyme action. Chemically bound water is water whose elements, as a result of a chemical reaction, have combined with the elements of another substance and formed new chemical compounds (hydroxyl ions or crystal hydrates). This bond with substances is very strong and to remove it, calcination or chemical interaction is necessary. During processing and storage of food products, water can change from one form of bond to another, which causes a change in their properties. There is little moisture in flour confectionery products. And almost all of it is connected, and by a physical-chemical bond. This explains their long shelf life. If we compare

confectionery products with other products, then on average flour confectionery products contain from 1 to 29% moisture. [1, p.71], while milk contains 87-90% moisture, and vegetables and fruits contain 70-95% [2, p.343]. Moreover, in vegetables and fruits, as well as in milk, the moisture contained is mainly in a free state. And this determines their short shelf life relative to confectionery products. Flour confectionery products are used on hikes, expeditions and even on space flights. The least amount of water is included in waffles with fat-containing fillings (1%). A relatively high percentage of moisture in gingerbread (14.5%) and sponge cakes (29.0%). [1, p.72-73] The humidity of the finished product is affected by the humidity of the dough. The importance of the dough depends on the amount of sugars and fats it contains. The lower the moisture content of the dough, the faster and less expensive the baking occurs [1, p.82]. If there is not enough moisture in the dough, the finished product looks stale and the crumb turns out dry. The porosity of the product decreases and the taste becomes less pronounced. If there is excess moisture, the dough spreads and does not hold its shape. Starch does not bind all moisture, so the product turns out deformed, the crust can peel off from the crumb. Such products are difficult to store, and their shelf life is shorter than that of standard products. [1, p.83].

The presence of magnesium and calcium salts makes water hard. According to the standard, it should not exceed 7 mg*eq/l. When boiled, such water forms scale on the walls of the dishes used for cooking, which necessitates their frequent cleaning. Water hardness is not taken into account when preparing flour confectionery products, because it has little effect on the quality of the finished product. [1, p.83] There is a misconception among technologists and enterprise managers that water supplied by the city water supply or its own water supply system is a product with standard properties, the quality of which is obviously guaranteed by special external control systems. In fact, the quality of tap water does not always meet the strict requirements imposed by regulatory documents for drinking water. This determines the need for systematic control of water used in food production at the food industry enterprise itself. Water used for drinking and cooking must meet certain requirements. It should have a temperature of 8-12 oC, be transparent, colorless, without foreign odors and tastes.

Carbohydrates According to the currently accepted classification, carbohydrates are divided into three main groups: monosaccharides, oligosaccharides and polysaccharides. Carbohydrates in flour confectionery products are mainly represented by mono-, disaccharides and starch. Cookies and crackers contain a large amount of starch - up to 70%, and sugar predominates in cakes and pastries. They have virtually no fiber, which is so necessary for our body. Its content does not exceed 0.8%. [1, p.72-73] A large amount of mono- and disaccharides is contained in waffles with fat-containing fillings (44.5%), while they contain 20.2% starch. The record holder for starch content is a cracker (63.3%), but there are very few mono- and disaccharides in it, only 2.8%. [1, pp. 72-73] Among the monosaccharides, glucose, fructose, galactose, arabinose, xylose and D-ribose are widely known. In the manufacture of flour confectionery products, glucose and fructose are most often used. The use of glucose reduces their sweetness, since the degree of sweetness of glucose compared to the sweetness of sucrose is 60%. When glucose is used in finished products, a cooling taste is felt, which is explained by the property of glucose to dissolve in water while absorbing heat. Glucose helps relieve brain and muscle fatigue, maintains blood sugar levels and restores glycogen stores in the liver. [3, p.35] Fermented with yeast. Glucose solutions are optically active and rotate the plane of a polarized light beam to the right. Is a strong reducing agent. Combining with other substances it forms glucosides. Fructose is the sweetest, most soluble and easily digestible sugar. Its sweetness is times higher than the sweetness of glucose. [4, p.9]. The functioning of fructose in the human body is not regulated by insulin, so it is recommended to be used as a sweetener and a source of carbohydrates for patients with diabetes. Also, fructose does not lead to caries. And, like glucose, it helps the body recover after heavy physical and mental stress. However, despite all the positive qualities of fructose, manufacturers do not strive to add it to all their products, since fructose is very hygroscopic and the product becomes susceptible to dampness. Therefore, storing goods prepared with

fructose requires special conditions, which is not always possible both at enterprises and in places of sale. Fructose is fermented by yeast. It is optically active, but its solutions, unlike glucose, rotate the plane of the polarized light beam to the left. Is a strong reducing agent. When combined with other substances, it forms fructosides. Disaccharides are complex sugars that, when hydrolyzed, break down into two molecules of monosaccharides. Among the disaccharides, sucrose, maltose and lactose are especially common. Sucrose is found in huge quantities in sugar, accounting for 99.9% of its mass [3, p. 38].

The water-absorbing properties of sugar make it useful when kneading dough with high humidity, because sugar regulates the degree of swelling of flour proteins and starch. Increasing the dosage of sugar in the recipe makes the dough softer and more viscous, reducing the need for water for kneading the dough. However, too much sugar in the recipe results in a very spreadable dough that sticks to the equipment. And if there is still little fat in the product, then the product turns out to be very hard. [17, p.347] In flour confectionery products, the share of sugar accounts for from 8 to 25%. [1, p.78]. However, when adding filling, cream or glaze to confectionery products, the share of sugar can increase to 63.8% [5, p. 31]. Sucrose is absorbed by the human body almost 100%. It is believed that excessive sugar in the diet leads to the development of diabetes mellitus in 10-20% of cases. In addition, when excess sugar enters the body, it turns into fat, the accumulation of which in the body leads to obesity in 20-30% of cases. In 5-15% of cases, the cardiovascular system becomes ill. [6, p.2] This should be remembered if confectionery products are frequently consumed as food, especially for elderly people and those not engaged in physical activity. Maltose in confectionery products appears when starch syrup is added to the recipe. The human body absorbs maltose well and is a useful nutrient, since it breaks down into two glucose molecules. If the sweetness of sucrose is taken as 100, then the sweetness of maltose is Maltose has restorative properties, quickly dissolves in water, and is well absorbed by the human body. Lactose is contained in confectionery products that contain milk in the recipe. The importance of lactose for the body is very great, since it is an important nutrient, and is especially necessary for the children's body. If the sweetness of sucrose is taken as 100, then the sweetness of lactose is 16. It has restorative properties. Aqueous solutions of lactose are prone to darkening. Under the influence of lactic acid bacteria, lactose is fermented into lactic acid. Of the polysaccharides in flour confectionery products, starch is found. Starch does not dissolve in cold water, but only swells, and at higher temperatures it forms a viscous colloidal solution - starch paste. The carbohydrate part of starch consists of polysaccharides, amylose (18-25%) and amylopectin (75-82%), differing in structure, physical and chemical properties. Amylose has an unbranched structure, dissolves in hot water and forms slightly viscous solutions. Amylopectin has a branched structure; in hot water it only swells and forms a viscous paste. [16, p.89] Under the action of enzymes or acids when heated, starch adds water and hydrolyzes. During hydrolysis, starch is depolymerized and dextrans are formed, then maltose, and with complete hydrolysis, glucose. [16, p. 89] When starch is added to the recipe, the products become crumbly and soft, this is due to the ability of starch to absorb water. When starch enters the human body, under the action of the salivary enzyme ptyalin, and then the pancreatic juice enzyme amylase, it is converted into maltose. And maltose breaks down into 2 glucose molecules, which are well absorbed by the body. The polysaccharide fiber is almost completely absent in confectionery products. Insoluble in water and other solvents. Fiber has almost no nutritional value for humans, because the body does not have enzymes to break it down into sugars. However, it has a sorbing effect in the intestines, normalizes intestinal microflora, and also removes cholesterol from the body and reduces blood sugar levels. Therefore, some manufacturers introduce fiber during the preparation of confectionery products; for example, the composition of Yubileinoye Utrenneye cookies contains 5% fiber. A person's daily need for carbohydrates is 400-500 g [5, p.29] Currently, much attention is paid to changing the structure of the range of confectionery products in order to ensure demand for products with a reduced sugar content [1, p. 75].

2.6 Benign quality A product, the use of which does not have a harmful or adverse effect on the human body, can be called benign. A benign product should not contain substances hazardous to human health. Solving the problem of the quality of food products, including flour confectionery products, largely depends on the choice of safe raw materials, compliance with technologies and shelf life. There is a special classification of harmful and foreign substances in raw materials. These are substances originally present in the raw materials; substances that entered the raw materials or finished product from the external environment or during the preparation process; as well as substances specifically introduced by humans to increase the nutritional value of products or extend their shelf life. Harmful substances may initially be present in the raw materials for the confectionery product. This is observed if a component containing modified formations, for example, modified soy protein, was added to the recipe. And also when the ingredients were contaminated or poisoned. It is known that the preparation of flour confectionery products, as a rule, involves the use of fat-containing raw materials, which are subject to special safety requirements. An important indicator of the safety of fatty products is their content of oxidative high-molecular and volatile compounds, free fatty acids, diglycerides and other substances [15, p. 52]. It is also known that oils, under the influence of high temperatures, emit a whole range of harmful substances, including including carcinogenic ones [15, p. 52]. To eliminate the influence of harmful components on the human body, strict requirements are imposed on the deep-frying processing of semi-finished products in oils and fats. Also, to increase the nutritional value of confectionery products, food products are enriched with useful substances, which, if the concentration is not observed, can also make the product unsafe for humans. The micronutrient content in the fortified product should be sufficient to satisfy 30-50% of the daily requirement for it at the usual level of consumption of the finished product. It is necessary to ensure a safety condition, according to which the total amount of individual micronutrients in the daily diet should not exceed safe levels of their consumption. Attention should be paid to the sale of products containing biologically active components in transparent packaging. A product can acquire unpredictable properties due to the accumulation of products of photochemical reactions during its warehouse and display storage. [8, p.8]

Ways to increase nutritional value Insufficient consumption of vitamins and microelements with food has now become a worldwide problem. In the USA and Western Europe, the need for microelements is met only by 50%, and for vitamins by 70% [9, pp. 30-31]. In our country, the situation is aggravated by the traditionally low consumption of vegetables and fruits and the recent lack of meat and dairy products in the diet of a significant part of the population [9, pp. 30-31]. Currently, vitamin and mineral tablets and premixes are produced in our country and abroad, but this is not enough. A radical solution to the problem can only be large-scale fortification of food products consumed by all segments of the population. One of these products is flour confectionery products.

Currently, confectionery products are considered as convenient objects for fortification with micronutrients, since they are one of the most popular consumer products. Taking into account the existing nutritional deficiency of the population of Belarus (lack of carotene, vitamins, calcium, iron, iodine, dietary fiber), the following groups of fortifying additives were identified:) Special vitamin and mineral premixes for confectionery products, which include some B vitamins, folic and ascorbic acid, iron and calcium. 2) Antioxidant vitamins) Dietary fiber (wheat bran, wheat germ flakes). [8, p.7])Micronutrient supplements with protective effects. Much attention is paid to soy nowadays, since the use of soy products in the preparation of flour confectionery products allows one to reduce the consumption of saturated fats and cholesterol while equally providing the human body with vegetable protein. However, the dangers of soy proteins have already been proven. They can cause deterioration of the brain and nervous system in children. This is most likely due to the fact that during the hydrolysis of proteins, the activity of some amino acids is lost. As a result, protein digestibility decreases. Soybeans are also capable of accumulating radioactive strontium, which is a highly toxic radionuclide. The use of soy as a

food additive is a controversial issue. [8, p.16] Various dietary supplements from plant materials (ginseng, Jerusalem artichoke, sea buckthorn, etc.) are added to flour confectionery products. Such products have a pronounced therapeutic and protective effect. Therefore, they are recommended to be used to increase the body's performance and resistance to stressful situations. Dietary additives began to be included in confectionery products. After this, the products become not only a delicacy, but also a medicine, which allows you to heal the body in soft, gentle conditions. Vitamin and mineral supplement "Fortamin" contains B vitamins, PP, iron and folic acid. "Fortamin-1" is intended for fortification of flour in mills, and "Fortamin-2" is intended for mass grades of confectionery products made from non-vitaminized wheat or rye flour. "Amiton" is a supplement enriched with iodine. "Ammivit" is a grape concentrate that contains 18 amino acids, 17 vitamins, 18 macro- and microelements and betasitosterol (a regulator of cholesterol levels in human blood). It eliminates hypo- and avitaminosis, increases the body's immune defense, and activates metabolism. The dietary supplement "Gemmos" is based on a mineral-amino acid substrate. Normalizes metabolism, helps weather-sensitive people tolerate meteorological changes, improves hematopoiesis, and also has regenerative properties. It has a completely balanced composition, is well absorbed by the body, and is not doping. To treat and prevent dysbiosis, confectionery products are enriched with probiotics, symbiotics and prebiotics. For example, the saccharide lactulose, which is a prebiotic. It stimulates the growth of bifid flora in the human body. It can withstand high temperatures and acidic pH values. Recommended for inclusion in children's diets. Used to treat chronic constipation, hepatic coma, protein poisoning, liver cirrhosis. Recommended doses of lactulose are 3-5 g per day. Algae is added to flour confectionery products as a source of protein, carbohydrates, vitamins and microelements. The microscopic algae *Sprulina platentis* (*sprulina*) is of greatest interest. It contains a large amount of protein (up to 70% of dry weight) [8, p. 19]. Moreover, this protein is represented by all essential amino acids. Therefore, consuming 36 g of *sprulina* provides more than 100% of an adult man's daily requirement for essential amino acids. *Sprulina* lipids are predominantly represented by polyunsaturated fatty acids (PUFAs), such as linoleic, arachidonic and eicosapentaenoic acid.

The daily requirement for PFA should be at least 1% of total calorie intake, and 10 g of *sprulina* provides 8-14% of a person's daily need for PFA. This algae can be considered as an effective remedy against vitamin deficiency, because it is a valuable source of B-carotene, B vitamins and vitamin E. Dry *sprulina* biomass has antimicrobial and antioxidant properties, so it can be used to remove free radicals from the body, which prevents cancer and aging. *Sprulina* contains many minerals, such as Cu, Mo, Co, Ni, Zn, B. 10 g of *sprulina* contains 10% of the daily human requirement for calcium and magnesium, 16% for manganese, 17% for chromium and slightly less for zinc, copper, selenium, germanium [8, p. 20]. Methods have been developed for obtaining iodine-rich *sprulina*, and we have also learned how to obtain chromium- and selenium-containing preparations of *sprulina*. *Sprulina* is easily digestible and completely non-toxic. To eliminate iodine deficiency in the population, "Iodcasein" is also used to fortify confectionery products. It is a yellow powder and contains 7-9% iodine. With regular consumption of confectionery products enriched with iodocasein, the body receives a sufficient amount of iodine, which has a beneficial effect on all types of metabolism in the body, cellular and, consequently, tissue respiration is stimulated. For patients with diabetes, sugary substances are replaced with sorbitol or xylitol. For patients with anemia, hematogen is introduced into the products - a source of iron and complete protein; for patients with goiter and for preventive nutrition of the elderly - seaweed - a source of iodine, alginic acid, and microelements. Coffee is excluded from confectionery products intended for children, and the amount of cocoa is reduced to the minimum possible. Conclusion Flour confectionery products are the main source of energy for the average person. They represent joy, goodness, positive emotions, and this is the main component of any food. The presence of sweets is necessary in our diet, but we need to strictly control them and, if possible, reduce the harm they cause to the body. There is little moisture in flour confectionery products. And almost all of it is connected, and by a physical-chemical

bond. This explains their long shelf life. They are used on hikes, expeditions and even in space flights. The importance of the dough depends on the amount of sugars and fats it contains. Water hardness is not taken into account when preparing flour confectionery products, because it has little effect on the quality of the finished product. Carbohydrates in flour confectionery products are mainly represented by mono-, disaccharides and starch. They have virtually no fiber, which is so necessary for our body. Its content does not exceed 0.8%. The use of glucose in flour confectionery products reduces their sweetness and gives a cooling taste. Fructose is 2.2 times sweeter than sugar and causes less harm to the body than sucrose. But it is not widely used in production, as it is very hygroscopic. Sucrose exhibits positive properties when kneading dough, but is absorbed by the human body almost 100%, which can lead to obesity and diabetes. Maltose is a nutrient and is easily absorbed by the body. Lactose is also a nutrient that children need. The addition of starch has a positive effect on the structure of the product. When it enters the human body, starch is converted into maltose and then into glucose, which is well absorbed. The polysaccharide fiber is almost completely absent in confectionery products, and although it is not absorbed by the human body, it has a positive effect on the functioning of the esophagus. On average, flour confectionery products contain from 3 to 10.6% proteins, which is not small. But due to changes that occur with protein during the cooking process (denaturation, melanoid formation), it is absorbed by the body by only 85%. In flour confectionery products, the fat content ranges from 1 to 40%.

To prepare confectionery products, liquid and solid fats are used, as well as special confectionery fats, which consist of a mixture of various fats. They not only increase the calorie content and nutritional value of products, but also improve their taste, giving them a rich taste. Fats help preserve the freshness of products for a longer time - they delay staleness. The average digestibility of fat is 94%, which due to excess consumption leads to obesity and cardiovascular diseases. In flour confectionery products, vitamins of group B (B1 and B2), PP predominate, and traces of β -carotene are also found. However, calculations show that 100 g of confectionery products provide no more than 4-5% of a person's daily need for vitamins B1, B2 and PP. Mineral substances in flour confectionery products contain sodium, phosphorus, potassium, iron, calcium and magnesium. Manufacturers strive to enrich their products with vitamins, since healthy eating has recently become firmly entrenched in the behavior of many people. Flour confectionery products are a convenient product for enrichment, as they are very popular among the population. The chemical composition of flour confectionery products determines their high nutritional and energy value, because they are the main sources of carbohydrates and fats in the human diet. Flour confectionery products do not have sufficient biological value, since biologically active substances are either absent from the main raw materials or are destroyed during the cooking process under the influence of high temperatures. This suggests that the high calorie content of a product does not always indicate its biological value. The physiological value is also low, due to the absence of many physiologically active substances. With excessive consumption, the body will gradually begin to deplete, metabolism will be disrupted, and the immune system will be weakened. High-quality confectionery products have a very high organoleptic value, since their organoleptic properties are at a high level. Flour confectionery products are a delicacy, and one of their purposes is to give joy to people with their appearance, aroma, and taste. Flour confectionery products belong to the category of non-perishable products, since their moisture content is low, and they also contain large amounts of sugar and fat, which in turn also inhibits many reactions and inhibits the growth of microorganisms. This all extends the shelf life. Therefore, flour confectionery products can be taken with you on long trips. The main storage conditions for confectionery products are: cleanliness, dryness. The room should be bright, well-ventilated, and temperature-controlled. The sanitary conditions must also be maintained, namely, there must be no pests and rodents. The preparation of flour confectionery products, as a rule, involves the use of fat-containing raw materials, which are subject to special safety requirements, in particular the use of antioxidants and limiting the access of oxygen to the product. Also, to increase the nutritional value of confectionery

products, food products are enriched with useful substances, which, if the concentration is not observed, can make the product unsafe for humans. The micronutrient content in the fortified product should be sufficient to satisfy 30-50% of the daily requirement for it at the usual level of consumption of the finished product. It is necessary to ensure a safety condition, according to which the total amount of individual micronutrients in the daily diet should not exceed safe levels of their consumption. The food industry tries, to the best of its ability, to take care of the health of its consumers, increasing the nutritional value of flour confectionery products through the use of various additives and improvers in the production. Measures are also taken to reduce the amount of fat, introduce dietary fiber and eliminate trans isomers of fatty acids. In the production of cakes, pastries, and cookies, biologically active substances and various additives can be actively used, which not only increase the nutritional value of the products, but also extend their shelf life.

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