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DEVELOPMENT OF THE RUSSIAN BAKERY MARKET IN THE MODERN MARKET CONDITIONS

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Abstract

The paper examines the state and structure of the Russian bakery market and the prospects for its development in the modern world. In economically developed countries, the imposed paradigm of a healthy lifestyle is based primarily on a low-carb or carb-restricted diet. In the 21st century, bakery manufacturers offer new tastes in the form of 'colored' bread with additives of brightly colored vegetables, such as beets, carrots, spinach, and the reduced calorie content. Based on the data of Russian and international forecasting and analytical companies, the authors indicate world trends in the development of this segment of the food market and highlight the main directions of development of the world and Russian bakery markets, as well as the possibilities for domestic manufacturers to occupy their own niche in the world market. Considerable attention is paid to manufacturing of functional bakery products with therapeutic and prophylactic properties. The paper summarizes the practical experience of Russian manufacturers of functional bread varieties and gives their detailed characteristics. The paper provides a forecast assessment of development of the Russian market of bread and bakery products and the prospects for its entry into the world market. In conclusion, the authors argue that in the near future Russian manufacturers should take into account the impact of the pandemic on the effective demand of the population, which will result in the decreased demand for expensive craft bakery products and the increased demand for mass varieties of bread.

Keywords: Bread market, market conditions, range of health-promoting products

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1. Introduction

For the Russian population, bread is historically an essential and irreplaceable product, which has been consumed for many centuries and whose role in the diet of a modern person is significant. The beginning of the 21st century introduced quite significant changes in the culture of bread consumption, consumer preferences, and, consequently, in the technology of its production (Dubtsov, 2017). In Russia, the attitude towards bread has changed, it has lost its role as the product of daily necessity, since the range of products available to the population in the post-reform period has increased. Bread has lost its role as a socially significant product, since quite expensive types and varieties of bread are currently available for a certain segment of consumers. Consumer tastes are becoming more demanding, which makes bread not only a product to satisfy hunger, but a product that affects human health and, in particular, weight. In recent years, bakery products have acquired therapeutic and prophylactic value due to various useful additives: dietary fiber, minerals, polyunsaturated fats, fatty acids, essential amino acids, antioxidants. In addition, due to new production and packaging technologies, bread is excluded from the group of perishable products, the production of which is geographically tied to sales markets. Import and export of bread and bakery products is a common practice of international food relations.

2. Problem Statement

In the study, it is necessary to conduct a deep analysis of the available range of products for therapeutic and prophylactic purposes (functional varieties) on the domestic bakery market and determine the prospects for its development and entry into the world market.

3. Research Questions

In accordance with the aim of the study, the authors assessed the world trends in development of the bakery market; analyzed the dynamics of the production of bread and bakery products in the Russian Federation and the structural changes observed over the past decade; assessed the range of therapeutic and prophylactic varieties of bread and described their useful properties and impact on the functioning of the human body.

4. Purpose of the Study

The purpose of the study is to assess the current trends in the formation of consumer demand for bread and bakery products, and the possibilities of Russian manufacturers to rank high on the bakery market.

5. Research Methods

The trends of development of the world and domestic bakery market were analyzed based on studies by domestic and foreign scientists, data from the Internet, statistical collections in Russia and regions, data obtained by international research organizations, proceedings of scientific and practical

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conferences, and advertising materials. Research methods include structural and logical analysis, and statistical methods.

6. Findings

The entire population of the world is seduced by the idea of a healthy diet, which implies a low-carb or carb-restricted diet. Consequently, bread manufacturers must consider these changes when developing bread formulations and production technologies. Based on the bakery market research, the international company Mintel (Bread and bakery market overview, 2018) has identified the main global trends in the development of the bakery market:

1. Bright multi-colored bread that attracts consumers. Manufacturing of bread with additives of brightly colored vegetables that enrich the products with vitamins and microelements and give them a bright saturated color and specific flavor (carrots, beets, spinach, etc.). In addition, substitution of some of the flour with vegetables significantly reduces the calorie content of bread, which is in line with the global trend (Achremowicz & Nowotna, 1999).

2. Low carbohydrate content. The decreased content of fast carbohydrates in bakery products in order to overcome the world tendency to reject the consumption of bread and increase the consumption of animal proteins, vegetables and fruits. The development of low-carbohydrate bread formulations that include protein and fiber to ensure consumer demand and preserve the markets channels for bakery products (Hou & Shaw, 2007).

3. Global tastes. Manufacturing of new types of bread to provide ‘street food’ using national food cultures: Spanish, Mexican, Indian, Asian, Middle Eastern, African, Scandinavian. Restaurants that offer international cuisine are widespread all over the world, and the use of national types of bakery products in such restaurants will stimulate demands (Breene, 1991).

4. An increase in manufacturing of small-piece bakery products as a result of the development of world trends in ‘snacking’, as well as the development of a fast catering system (street food), which is caused by the accelerated pace of life. Over the past decade, more and more mini versions of regular dishes have appeared at restaurants and street cafes. Experts from the international research organization Euromonitor International predicted the growth of the global snack market by 2020 to 138.2 billion dollars with an average annual growth rate of about 8.0%, and the growth of this segment of the food market is predicted not only in countries with low per capita consumption of snacks (up to 1 kg), but also in countries with high consumption (4–11 kg) (Caballero et al., 2005). Modern street food is also an object of gastronomic tourism, because in every region of the world street food reflects the history of the country and, at the same time, is distinguished by good flavour and low price. Small-piece frozen semi-finished bakery products are especially in demand for street food. The digitalization of the life of the population personalizes the consumer–manufacturer–retailer communication, which also increases the demand for small-piece bakery products;

In this regard, Russia should follow world trends in order to enter the world bakery market. The development of the bakery industry in Russia over the last decade is characterized by the following features:

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- an increase in manufacturing of bakery products in retail chains and a decrease in industrial manufacturing, as a result, large stores from trading partners turned into competitors. At the same time, retail chains not only bake bread from frozen semi-finished products, but also master the manufacturing cycle – from kneading to baking. Unlike the European consumer, who prefers bread with a long shelf life that can be reheated, and semi-finished products that can be baked, the domestic consumer prefers freshly baked bread and buys it every day. In this regard, the demand for frozen products in the form of half-baked bread and semi-finished products is constantly growing (Bread and bakery market overview, 2018; Vasyukova, 2007);

- an increase in the range of bakery products since the consumer makes increased demands on the variety of products and their packaging, while consumer preferences are constantly changing. All this forces manufacturers to conduct constant marketing research to develop sufficiently flexible strategies for the formation of a range of products. In the last decade, the fashion for healthy food has dominated the world, which increased consumer demands for functional varieties of bread;

- formation of a rational consumer demand among the population, which is focused on healthy, environmentally friendly types of bakery products that contribute to an increase in life expectancy. Bread manufacturers must counteract the myth of the dangers of bakery products. At present, about 6 million tons of bread and bakery products are annually produced in Russia, of which only 2.1% are intended for healthy nutrition (Table 01).

Table 1. Production of bread and bakery products in the Russian Federation, thousand tons

Type of products	2010	2015	2016	2017	2018	Basic growth rate,%
Bakery products made from wheat flour	3634	3431	2931	2809	2793	76.9
Bread made from rye and a mixture of rye and wheat flour	2051	2131	1839	1761	1710	83.4
Bakery products made from rye and a mixture of rye and wheat flour	37,1	53.5	46.5	43.9	59.3	159.8
Specialized bakery products and products enriched with micronutrients	…	…	123	122	123	x
Chilled semi-finished bakery products	…	…	3.5	7.0	9.0	x
Total	6816	6309	6082	5935	5779	84.8

- an increase in the demand for craft bread baked in the oven by hand in small batches. Manufacturers of this bread highlight its uniqueness and high quality, which are provided by manufacturing technology and organic raw materials. This bread is highly profitable because a number of consumers are ready to pay up to a thousand rubles per loaf of bread;

- an increase in export-import operations on the domestic market of bread and bakery products. The Russian consumer is showing interest in the national cuisines of various countries, which is associated with the development of international tourism, including gastronomic tourism. Russian tourists taste bakery products in other countries and are interested in buying such bread in their own country. Similar reasons make it possible to export bread and bakery products of Russian manufacturers.

In recent years, the bakery industry in most countries has increased the production of dietetic bakery products enriched with various useful substances that give them therapeutic and prophylactic properties (Attiyah et al., 1996; Martinez-Anaya, 1996).

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The enhanced health of the nation and increased life expectancy are a priority task of the governments of all states of the world. A sustainable trend in the world's population striving for a healthy diet necessitated the development of a formulation and technology for the production of fundamentally new bread varieties for therapeutic and prophylactic purposes.

These varieties are recommended for treatment and prevention of cardiovascular diseases and 'diseases of civilization' (arterial hypertension, diabetes mellitus, atherosclerosis, food allergies, oncology), as well as for elimination of the impact of unfavorable environmental conditions (Kuo et al., 1997, Rastogi & Singh, 1998). The lack of fiber, hemicellulose, pectin and lignin in food provokes such serious diseases as rectal cancer, obesity, diabetes mellitus, atherosclerosis, and cardiovascular diseases (Know-how in the search for food ingredients for the baking industry, 1996, Marine Nutraceuticals and Functional Foods: (nutraceutical Science and Technology), 2008).

The therapeutic effect of dietary bakery products of Russian manufacturers is achieved by introducing additional components into the formulation with regard to different age groups, jobs and territories with special living conditions (Table 02).

Table 2. Additional components of bakery products for different groups of consumers

Age groups, jobs, living conditions	Additional components
Children under 14 years old	Calcium, vitamins, vitamin and mineral preparations, protein fortifiers, wheat germ flakes
Middle and old age	Dietary fiber (bran, flour and whole grain)
Physical jobs	Increased content of protein and vitamins, vitamin and mineral preparations (B_x, B_2, B_6, PP, Ca)
Non-physical jobs	Plant materials that reduce calorie content
Environmentally neglected zone	Radioprotectors, detoxifying agents (beta-carotene, microcrystalline cellulose, pectins, seaweed powder, calcium, iodine-containing preparations, flax seeds)

Russian technologist have developed a large number of nutritional mixtures for prophylactic purposes that meet the needs of the human body in biologically active substances (Table 03).

Based on the world experience of baking and domestic technologies, Russian manufacturers of bakery products in the last ten years have developed many new formulations and produce variety of bread for therapeutic and prophylactic purposes (Table 04).

Table 3. Range of additives in the formulation of bakery products for prophylactic purposes

Additives	Useful substances	Prophylactic effect
Rosehip fruits, stinging nettle leaves, black currant, hawthorn	Carotenoids, organic acids, multivitamins	Cardiovascular diseases, general strengthening effect
Dill, parsley, celery, coriander seed meal	Inulin	Strengthening of cardiovascular activity and immunity
Artichoke powder	Fiber, pectin, proteins and essential amino acids, multivitamins	Activation of immune mechanisms, gastrointestinal diseases, diabetes mellitus, obesity
Cabbage, onions, garlic, kelp	Beta carotene, calcium, iodine, selenium	Reducing the risk of oncology, protection from the effects of radionuclides
Nuts and fruit seeds	Laetrile, lignans	Reducing the risk of cancer
Tomatoes	Lycopene	Reducing the risk of cancer

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Citruses and berries	Bioflavonoids, ellagic acid	Reducing the risk of cancer, genetic changes; slowing down the aging process
Condiments (turmeric, ginger, cumin, fennel, coriander, anise, cardamom, mustard)	Vitamins C, E, K, PP, B vitamins, betaine	Strengthening the immune system; reducing the risk of bowel and bladder cancer; stabilization of the digestive system
Amaranth flour	Lysine, oleic, linoleic, Omega-3, -6 acids, E, B, C vitamins, minerals, phytosterols, squalene	Prevention of cell aging; treatment of gout, osteoarthritis, coronary heart disease; reducing the risk of cancer
Charcoal	Carbohydrates, B vitamins, choline, A, E, H vitamins, chlorine, sodium, potassium, magnesium, phosphorus, copper, zinc	Improving the functioning of the digestive system; absorption and elimination of toxic substances and toxins from the body

Table 4. Variety of bakery products for therapeutic and prophylactic purposes in the Russian Federation

Variety	Additives	Useful substances	Therapeutic and prophylactic effect
Tri Bogatyrya bread	Pumpkin puree, caramel syrup, lentil flour	Organic acids, fiber, pectin, carotenoids, essential amino acids, B vitamins	Increased hemoglobin level with anemia; anti-stress effect; improved state of women during menopause; healing of stomach ulcers
Bobovoe Zernyshko bread	Lentil flour	Vitamins Bp B_2, PP, iron, phosphorus, magnesium	Obesity; digestive disorders; diabetes; diseases of the heart and blood vessels
Bran bread with calcium, baby buns *Lada, Appetitnaya*	Food chalk	Calcium	Substitution and elimination of radioactive strontium from the body
Biryulevskaya bun	Wheat germ flakes *Vitazar*	Microcrystalline cellulose, pectins, alginates, increased content of vitamin E	Reducing the negative effect of radionuclides on the body
Darnitsky, Ukrainsky novy bread, *Staroobryadch esky* iodized sliced loaf	Iodine additives (iodized salt and yeast, iodcasein)	Iodine	Iodine deficiency; prevention of diseases of the thyroid gland and cardiovascular system, pathologies of pregnancy
Belgorodsky bread with seaweed	Seaweed	Iodine, pectin	Elimination of zinc, lead, cobalt, radionuclides from the body; lowered blood glucose and cholesterol levels
Protein-wheat bread and protein-bran bread	Directionally changed composition	Increased or decreased content of carbohydrates and proteins	Diabetes mellitus, inflammatory processes
Achlorid bread	Directionally changed composition	Salt-free	Kidney and heart disease
Zdorovie, Barvikhinsky bread	Cracked grain	Increased content of coarse fiber	Violation of intestinal motility

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Bread for diabetes	Gluten, rice, buckwheat, barley flour	Gluten, B vitamins, vitamin E, minerals	Metabolic disorders, obesity
Bakery products *Ot Mikhalycha*	Vitamin-mineral premix *Flagman*	B vitamins, PP, E, P-carotene, iron sulfate	Disturbances in the nervous, digestive and cardiovascular systems, metabolic processes in the liver and intestines; maintaining the function of the adrenal cortex
Nizhegorodsky bread	Sprouted grain	Enzymes, vitamins, minerals	General strengthening effect; normalization of metabolic processes; increased immunity; slowing down the aging process
Prebiotic bakery products	Chicory root powder	Inulin	Promotion of the growth of beneficial bacteria in the intestine; lowering blood cholesterol level
Soeviy bread	Soy protein-lipid complex (SPLC)	Proteins, polyunsaturated, monounsaturated and saturated fatty acids, glucose, fructose, galactose	Prevention of cardiovascular diseases
Studencheskie bakery products for preschool and school children	*Valetek* premixes, beta-carotene in vegetable oil	Vitamins C, Bj, B_2, B_6, E, folic acid, carotene, calcium, iron, iodine	Decreased infant mortality; stimulation of growth, development and learning abilities; increased resistance to disease
Zarnitsa, *Oktyabrenok* buns for preschool and school children	Milk-protein concentrate casecite, skimmed milk powder	Vitamins A, E, C, D, H, B vitamins, macro- and microelements, milk proteins	Improved performance and resistance to infections; acceleration of recovery processes after physical exertion
Cherny burger, Berlinskaya buns	Malt, charcoal	Carbohydrates, vitamins, macro- and microelements, essential amino acids	Enhanced bowel function and digestion; absorption and elimination of toxic substances and toxins from the body; prevention and treatment of anemia, nervous and physical exhaustion

7. Conclusion

The study showed that the main trends in development of the world bread market predicted in 2015 by the forecasting and analytical company Global Industry Analysts Inc. turned out to be reliable (Global Industry Analysts Inc., 2019):

- increased demand for whole grain and freshly baked craft bread;
- increased popularity of functional (therapeutic and prophylactic) types of bread;
- Westernization of bread consumption (Western European and Anglo-American bread);
- increased vegan dietary preferences of the population that promote bread consumption;
- increased desire of the population to consume gluten-free, yeast-free, low-carbohydrate breads associated with a healthy lifestyle, which led to the development of fundamentally new formulations for bakery products.

The Russian bakery industry followed global trends, and after 2015, bread manufacturers mastered Western technologies for the production of certain types of bread (Italian ciabatta and pané al carbonone,

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French baguette) and developed formulations for original domestic breads (bran with calcium, protein-wheat, protein-bran, prebiotic, achloride).

Further development of the production of bakery products in Russia in the medium term implies the following:

- the use of sprouted (bioactivated) dispersed and whole wheat grain, grits, extrudants, mixtures of premium flour and bran);
- an increase in the protein value of bakery products due to soy flour, chickpeas, dairy-protein products and concentrates, fish meal, oilseed cake);
- enrichment with vitamins and minerals (premixes Valetek-8, Flagman, Vetoron), glycerophosphate and calcium lactate, eggshells, sugary kelp, chitin-glucan complex (CGC), chitosan, green tea extract;
- the use of sweeteners (aspartame, acesulfame K, saccharin, steviazide, sucralose, cyclamate, neohespiride, sweetly) for diabetics;
- the use of products of processing fruits and vegetables as fortifiers in the production of 'colored' bread.

At the same time, the forecast for development of the world market of bakery products for next year requires careful consideration of the impact of the pandemic on purchasing power of the population. In the Russian market, this factor has already caused a shift in sales volumes towards mass varieties of bread, a decrease in demand for expensive craft bread, and an increase in demand for whole grain breads and bread made from flour of low grinding.

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