ТЕНДЕНЦІЇ Й ПЕРСПЕКТИВИ РОЗВИТКУ УКРАЇНСЬКОГО РИНКУ РОСЛИННИХ ЗАМІННИКІВ МОЛОКА В ВОЄННИЙ І ПОВОЄННИЙ ПЕРІОД

Актуальність. Економічні зміни, пов’язані з військовим вторгненням, призводять до масштабних трансформацій в господарстві країни, економічних відносинах між суб’єктами агропродовольчих ринків, зокрема, молочного, формують передумови для становлення й подальшого розвитку їх інноваційних сегментів. Посилення тенденції скорочення поголів’я корів та обсягів виробництва молока в воєнний період, з одного боку, та зростання споживчого попиту на рослинне молоко в світі, з іншого, сформували передумови для розвитку сектору продукції ненімлочного основи на немолочний основі в Україні. Особливостями ринку рослинних замінників молока є соціальна значимість продукції, її вагома роль у забезпеченні продовольчої й екологічної безпеки держави. Також розвиток цього ринку забезпечує формування подовжених ланцюгів переробки вітчизняної аграрної сировини і наростання ринкової доданої вартості.

Мета і завдання. Метою статті є визначення сучасних тенденцій та проблем розвитку світового й вітчизняного ринку рослинних замінників молока, обґрунтування ролі релевантного ринку в продовольчому забезпеченні населення й Збройних сил України у воєнний та повоєнний періоди.

Матеріали та методи. Результати теоретичного узагальнення наукових праць й аналітичних оглядів до функціонування ринків рослинних замінників молока, що висвітлені в публікаціях фундаментального й прикладного характеру, а також статистичні дані Державної служби статистики України, нормативно-правовий базис продовольчого забезпечення Збройних сил України, формують матеріальну та методичну базу дослідження. Для вирішення поставлених завдань використано методи системного, структурно-логічного, порівняльного, статистичного аналізу.

Результати. В ході дослідження встановлено, що світовий молочний ринок зазнав значних трансформацій через зміни споживчих переваг, фізичної активності населення, кліматичних чинників, глобальних демографічних дисбалансів тощо. Ці обставини обумовили зниження якості молочної продукції, скорочення її виробничої бази, надію конкурентної спроможності продукції та сформували перспективи для розвитку світового ринку молочних альтернатив. Український ринок рослинного молока динамічно зростає, у 2020 р. порівняно з 2019 р. його обсяги збільшилися в 13,6 разів. Вітчизняні виробники для виготовлення рослинного молока використовують доступну та прийнятну сировину, а саме овес та гречку.

У воєнний період виникає необхідність в продовольчому забезпеченні населення та військових рослинним молоком. Запропоновано внесення змін та доповнень до каталогу продуктів Збройних сил України, за рахунок застосування корисних замінників продуктів харчування, виробництво яких передбачає використання вітчизняної аграрної сировини та приріст ринкової доданої вартості.

Висновки. Обґрунтовано необхідність визначення пріоритетних напрямків державного регулювання вітчизняного ринку рослинних замінників молока, зокрема, регулювання взаємовідносин між вітчизняними та вимогами продуктів на немолочний основі з Головним управлінням розвитку та супроводження матеріального забезпечення Збройних сил України через норми взаємовідносин державно-приватного партнерства. Перспективами подальших досліджень є розробка інституційного та методологічного забезпечення стійкості функціонування й розвитку українського ринку рослинних замінників молока у воєнний та повоєнний періоди.

Ключові слова: агропродовольчі ринки, рослинні замінники молока, світовий ринок, продовольча безпека, регулювання, ринкова додана вартість.

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TRENDS AND PROSPECTS FOR THE DEVELOPMENT OF THE UKRAINIAN MARKET OF PLANT-BASED MILK SUBSTITUTES IN THE WAR AND POSTWAR PERIOD.

**Topicality.** Economic changes associated with the military invasion lead to large-scale transformations in the country's economy, economic relations between the actors of agri-food markets, in particular, dairy, and form the prerequisites for the formation and further development of their innovative segments. The growing trend of reducing the number of cows and milk production during the wartime period, on the one hand, and the growing consumer demand for plant-based milk in the world, on the other, have created the prerequisites for the development of the industrial production of non-dairy products in Ukraine. The market of plant-based milk substitutes is characterized by the social importance of the products and their significant role in ensuring food and environmental security of the country. The development of this market also ensures the formation of extended processing chains for domestic agricultural raw materials and the growth of market added value.

**Aim and tasks.** The purpose of the article is to identify current trends and problems of development of the global and domestic market of plant-based milk substitutes, to substantiate the role of the relevant market in the food supply of the population and the Armed Forces of Ukraine in the wartime and post-war periods.

**Materials and Methods.** The results of the theoretical generalization of scientific works and analytical reviews on the functioning of markets for plant-based milk substitutes, which are covered in publications of a fundamental and applied nature, as well as statistical data from the State Statistics Service of Ukraine, the regulatory framework for food supply of the Armed Forces of Ukraine form the material and methodological basis of the study. The methods of systematic, structural and logical, comparative, and statistical analysis were used to solve the tasks.

**Research results.** The study found that the global dairy market has undergone significant transformations due to changes in consumer preferences, physical activity, climate factors, global demographic imbalances, etc. These circumstances have led to a decline in the quality of dairy products, a reduction in its production base, a drop in the competitive ability of products and formed the prerequisites for the development of the global market for dairy alternatives. The Ukrainian vegetable milk market is growing dynamically; in 2020, its volumes increased 13.6 times compared to 2019. Domestic producers use affordable and acceptable raw materials, such as oats and buckwheat, to make plant milk.

In wartime, there is a need to provide the population and the military with vegetable milk. It is proposed to make changes and additions to the catalog of food sets of the Armed Forces of Ukraine, through the use of useful food substitutes, the production of which involves the use of domestic agricultural raw materials and an increase in market added value.

**Conclusion.** The article substantiates the need to determine the priority areas of state regulation of the domestic vegetable milk market, in particular, the regulation of relations between domestic producers of non-dairy products and the Main Directorate for Development and Support of Material Support of the Armed Forces of Ukraine through the norms of public-private partnership relations. Prospects for further research are the development of institutional and methodological support for the sustainability of the functioning and development of the Ukrainian market of plant-based milk substitutes in the wartime and post-war periods.

**Keywords:** agri-food markets, plant-based milk substitutes, world market, food security, regulation, market value added.

**Problem statement and its connection with important scientific and practical tasks.** Economic changes associated with the military invasion lead to large-scale transformations in the country's economy, economic relations between the actors of agri-food markets, in particular, the dairy market, and form the prerequisites for the formation and further development of their innovative segments. The growing trend of reducing the number of cows and milk production during the wartime period, on the one hand, and the growing consumer demand for plant-based milk in the world, on the other, have created the prerequisites for the development of the industrial production of non-dairy products in Ukraine. The market for plant-based milk substitutes is characterized by the social significance of the products and their important role in ensuring food and environmental security of the country. The development of this market also ensures the formation of extended processing chains for domestic agricultural raw materials and the growth of market added value, which is a significant resource for the post-war recovery of the national economy.


Motuzyka Y. and Koshelnyk A. define global trends in the development of plant-based milk substitutes as a result of the trend towards the use of plant-based products instead of animal products, as these products are better absorbed and do not contain harmful hormones and antibiotics that may be found in animal products. In addition, the
A proportion of people with lactose intolerance and milk allergies has recently increased, forcing them to consume lactose-free products or completely eliminate dairy proteins from their diets, replacing them with vegetable proteins. Almost all over the world, consumers who adhere to the principles of healthy eating prefer mostly plant-based milk substitutes, choosing plant-based foods as an alternative to traditional products. This is especially true for those who have certain health problems but do not want to completely abandon the usual products (Motuzka Yu., Koshelnyk A., 2019).

According to the results of the study of the world milk market by V. Onegina, V. Antoschhenkova, and Y. Kravchenko, trends in recent years and significant transformations of this market have been identified (Factors of sustainable development of the agricultural sector economy). Scientists believe that in order to ensure the competitiveness of natural milk, it is necessary to actively prove its useful benefits to consumers, provide complete and reliable information about the quality of alternative products, and fight against unfair competition and the growth of counterfeit dairy products.

The market for plant-based products without animal ingredients has been growing rapidly in recent years: more and more companies are emerging to produce such products, production volumes are increasing, and consumer demand is growing. The range of products is also gradually expanding, meaning that people who have made a conscious choice in favor of plant-based foods have more opportunities to satisfy their taste preferences (Factors of sustainable development of the agricultural sector economy, 2019), Dzhedzhula V.V., Epifanova I.Y., Dziubko M., 2018).

Allocation of previously unsolved parts of the general problem. Despite the numerous works of scientists on the problems of development and regulation of the animal milk market, the issue of development and regulation of the market of plant-based milk substitutes remains insufficiently studied. The relevance of this area of research is enhanced during the wartime period due to the priority tasks of the state in organizing food supply for the population and the Armed Forces of Ukraine. These circumstances determined the purpose and objectives of the study.

Formulation of research objectives (problem statement). The purpose of the article is to identify current trends and problems in the development of the global and domestic market of plant-based milk substitutes, to substantiate the role of the relevant market in the food supply of the population and the Armed Forces of Ukraine in the wartime and postwar periods.

Materials and methods. The results of the theoretical generalization of scientific works and analytical reviews on the functioning of the markets of plant-based milk substitutes, which are covered in publications of a fundamental and applied nature, as well as statistical data of the State Statistics Service of Ukraine, the regulatory framework for food supply of the Armed Forces of Ukraine form the material and methodological basis of the study. The methods of systematic, structural and logical, comparative, and statistical analysis were used to solve the tasks.

An outline of the main results and their justification. Today, stores offer a variety of beverages based on plant-based ingredients, characterized by satisfying different taste demands of consumers. Herbal beverages have already moved from a niche segment to a full-fledged product category worldwide, which is a concern for livestock producers.

The largest market for dairy alternatives was formed in North America, as consumers from the United States and Canada began to actively try such drinks and subsequently increasingly refuse natural milk. Since 2014, sales of dairy alternatives have grown by 28% in Europe, 35% in the United States, 19% in Asia Pacific, and 21% in Latin America (Independent company "Euromonitor International", 2022).

The main suppliers in the market of alternative dairy products are The Whitewaves Food Company (USA), Eden Foods (USA), OATLY (Sweden), Earth's Own Food Company (Canada), and Danone.

Dairy products remain an important part of Nestlé's portfolio, providing essential nutrients, especially for young children, and contributing to the livelihoods of farmers around the world. Therefore, Nestlé continues to explore solutions and technologies to make dairy products more climate-friendly. According to Perfect Day research, a protein obtained through precision fermentation was found to be identical to whey protein found in cow's milk. This became the basis for the multinational corporation Nestlé, together with Perfect Day, to produce plant milk that would taste like cow's milk (Nestlé plans to produce vegetable milk, 2022).

In 2018, the European market for plant-based beverages, with the participation of several dozen companies, grew by 14.5% annually, characterized by an increase in producers, and the market segment itself is estimated at USD 5020 million,
with the constant emergence of new formats of plant-based products that go far beyond beverages. Dairy products of plant origin reached an estimated value of USD 11 billion in 2020, with the volume of plant milk production increasing twice as fast as cow's milk production.

North America and Europe dominate the global plant-based dairy market, with a combined 53% share in 2021. However, China has been identified as a key consumer in the market with a CAGR of 13.6% during 2020-2021.

The Dutch multinational financial company (ING) predicts that the market for plant-based dairy products in the European Union (EU) and the UK will grow to $8.9 billion in the next 5 years, up from $5.2 billion in 2019.

Analytical indicators determine that although plant-based alternatives currently remain a small share of the huge dairy industry, at the current growth rate, sales in this sector can be expected to exceed the volume of conventional animal products by the mid-2050s.

Currently, the most developed market is the UK with retail sales of about $1.18 billion, followed by France and Germany. According to Innova Market Insights, the global plant milk market exceeded $16 billion in 2018. The British Office for Statistics has added plant milk as a staple in its consumer price index. According to Nielsen, sales of oat milk in the UK grew by 76%, coconut milk by 24%, almond milk by 14%, and soy milk by 5% this year (The market of milk substitutes will exceed $16 billion, 2022).

According to ING, by overcoming these "weaknesses", the market share of plant-based substitutes will grow to 1.3%, while by 2025 the share of dairy alternatives will increase to 4.1% (EU. The market of vegetable milk and meat will double in 5 years).

Starting in 2021, China will see an accelerated deployment of plant-based beverage enterprises, such as industry giants and new consumer brands such as Yili, Mengniu, Nongfu Shanquan, OATLY, and Ozark, making the plant-based beverage market particularly lively. Some data show that since 2020, the number of plant milk in China has been expanding significantly in both online and offline channels, and data from e-commerce platforms claim that the Chinese plant-based beverage market grew by 800% in 2020. The volume of purchases grew by 900%, not least due to the outstanding contribution of plant milk, which is expected to exceed 300 billion yuan in 2025 (Healthy drinks are entering an era of mindfulness, and the category is welcoming a new tipping point in development).

Over the past five years, sales of plant-based milk in the world have increased by more than 61%, while sales of cow's milk have decreased by 15% (Investments in the production of oat milk will pay off within three years).

In modern conditions, consumers prioritize the use of plant milk for the following reasons
- the choice of a healthy lifestyle, the desire to improve their health
- priority of consumption of natural and organic products in the diet
- ethical attitude towards animals
- opinion about the negative impact of meat and dairy production on the environment
- the value of food prices.

One of the explanations for these reasons is that animal products may contain residues of hormones and antibiotics used in animal husbandry, which is not always indicated on the labeling, and the association of milk with digestive difficulties and problems.

The perception of a negative impact on the environment is also driven by the fact that the dairy sector is responsible for 2.2% of global greenhouse gas emissions, which are increasing over the years, while the growth rate of the cow population is decreasing. For comparison: the total number of dairy cows in Ukraine as of 1990 was 8.5 million cows, with a productive milk yield of 24 million tons of milk per year, of which 5.5 million was milk from cows kept by the population, today there are 1.67 million cows in Ukraine (Is Ukraine switching to "alternative" milk? The State Statistics Service released interesting data., 2022).

The production of plant-based products as an alternative to dairy products included in the range of food products for special groups of the population is considered by scientists Borysenko O.S., Romanenko O.V. (Borysenko O.S., Romanenko O.V., 2021). These scientists consider alternative dairy products to be one of the main directions for improving the state of the dairy industry, based on the fact that the current development of the market in this industry is characterized by the dynamics of annual production decline, the use of outdated technologies in production, and production in which is determined by high cost indicators. For these reasons, it is necessary to provide the market with products made from plant raw materials of domestic origin by supplementing it with these products, rather than replacing dairy products of animal origin.
The Ukrainian market is not sufficiently filled with products of plant origin and is represented mainly by foreign products. In general, the production of plant-based products is actively developing in Ukraine and is only at the beginning of its formation, but many companies around the world are already using plant-based recipes in the production of their plant-based products in the food industry.

Oat, almond, coconut, rice or buckwheat milk is a fairly new product on the Ukrainian market. Until 2017, it was not available in every supermarket. It was used more often as a delicacy or an addition to morning coffee than as a regular product on the daily table. It was only in 2018 that the first domestic producer appeared, creating its own line of plant milk made without the use of animals.

It is noted that the growth in demand for plant milk in Ukraine began in connection with the spread of trends in its consumption in the United States and the United Kingdom in 2017. In 2018, the first domestic producer of this type of product started operating in Ukraine. A sharp increase in the production of plant-based products in Ukraine occurred in 2020.

In 2020, the production of vegetable milk grew to a record high, with volumes increasing by 1259.1% compared to 2019. This is evidenced by the State Statistics Service of Ukraine. Thus, in 2019, 1.32 tons of vegetable milk were produced. Already in 2020 - 17.94 tons (Is Ukraine switching to "alternative" milk? The State Statistics Service released interesting data., 2022). During 2019-2020, the demand for vegetable milk increased 14 times (Ukrainians like vegetable milk).

Before the emergence of domestic producers, plant milk was quite expensive. According to a study by Pro Consulting, the Ukrainian market has developed in line with global trends, and only recently, with the expansion of the number of producers, has it begun to offer more affordable and accessible options for plant-based milk to everyone. This trend has lowered prices and made it possible to compete with its cow counterpart. In 2019, the total volume of alternative milk consumed by Ukrainians amounted to 1.32 thousand tons, while in 2020 this figure increased to 17.9 thousand tons.

According to analysts, the development of the plant-based milk market in Ukraine is characterized by the lack of exports of this type of product, and the features of restraining its development - a higher price compared to traditional cow's milk(The market of vegetable milk is gradually developing in Ukraine., 2020).

It is noted that the main consumers of plant milk in Ukraine are people suffering from lactose intolerance; vegans, vegetarians, raw foodists; those who strictly observe the restrictions of religious fasts; those on a diet for medical reasons; those who want to consume products without antibiotics and hormones used in animal husbandry; those who follow fashion trends in the field of nutrition, in particular, those concerned about losing weight. In addition, people who want to diversify their diet are also among the consumers of plant milk.

At the same time, according to a study by the Kyiv International Institute of Sociology and UA Plant-Based, more than 65% of Ukrainians are ready to switch to plant-based products.

Plant-based milk offered to Ukrainian consumers is an aqueous emulsion of extracts from nuts, cereals, seeds and seedlings of certain crops. It is positioned as a substitute for natural milk of animal origin for vegans, people with lactose intolerance and followers of certain healthy eating ideas. However, it contains gluten and is not suitable for people with nut allergies. Ukrainians show the greatest demand for soy and oat milk, as it contains the fewest allergens.” (The development of the plant milk market in Ukraine is hindered by the higher price compared to cow's milk. 2021).

The current state of the domestic market of plant milk is at the development stage, characterized by an increase in demand for alternative drinks, showing a constant increase. For which the stimulating factor of development will be determined not by the end consumer, but by food producers who will use dairy-plant semi-finished products in their technological maps.

That is why Ukrainian producers keep up with the trends and produce tasty and healthy food, including: VforVegan, Green Cow, Vegetus, Vegi Land, Ideal Nemoloko, BurundukBurunduk. An innovator in the domestic market of plant-based milk is Lustdorf (whose competitor is Vitmark-Ukraine), which in 2018 launched a new brand of plant-based alternative to traditional milk called Ideal Nemoloko (Recently, the number of people who have given up animal food has increased significantly, and the culture of plant-based products is spreading among Ukrainians. Accordingly, the range of products is also increasing).

Demand for plant-based products also affects the behavior of companies: some start investing in the market of dairy alternatives, while others reduce their investments in livestock. Thus, according to the Good Food Institute (Elise VanDyke., 2022), in the first quarter of 2020, more
Investments were made in the alternative protein market than in 2019. In the same year, American companies producing meat, eggs and dairy products of plant origin received investments worth USD 747 million, which is considered the largest investment volume in the history of the industry.

According to experts, the cost of setting up a plant-based milk production facility is $75 thousand, of which 76% is for the purchase of equipment.

The plant milk production process consists of four main stages. Initially, the company will focus on the production of soy milk. In the future, the product range can be expanded by adding the following types of plant milk:

- almond milk
- hazelnut milk
- sesame milk
- milk from sunflower seeds;
- rice milk;
- hemp milk.

Financial calculations made as part of the business plan for the production of plant milk in Ukraine show that the profitability of sales of the enterprise created under it will be at the level of 17.4%, which means more than 17 cents of net profit from each euro of revenue (The profitability of the plant milk production business is published., 2021).

According to the calculations made as part of the business plan for organizing the production of oat milk, the annual revenue of the created enterprise will be about $145 thousand. With a sales margin of 20-22%, the net profit will be at least $25 thousand per year. Therefore, it is estimated that all investment costs for the implementation of this project will be paid off within three years." (Investments in the production of oat milk will pay off within three years).

Since not much raw material is grown in Ukraine, domestic producers use affordable and acceptable raw materials, namely oats and buckwheat, to produce plant milk. Ukraine has a sufficient raw material base for such production, which, through the use of high-quality technologies, equipment and low cost, will allow selling vegetable milk in the future both on the domestic market and for export.

Pro-Consulting has conducted a study of the plant milk market in Ukraine, which examined the dynamics of plant milk production, the largest market operators (all producers and the largest importers), as well as the dynamics of production (in natural and monetary terms) and import of plant milk, consumer preferences in the plant milk market and sales channels, the results of which are presented in Figure 1. (Annotation to the market analysis., 2021).

The study found that oat and soy milk are the most popular on the Ukrainian vegetable milk market, as the raw materials for the production of these types of milk are grown in Ukraine, which makes it easier for Ukrainian producers.

Currently, the niche of plant milk in Ukraine is filled mainly by imported products. At the same time, our country has a large raw material base, which creates favorable conditions for the production of competitive organic plant milk and products based on it. A high-tech enterprise in line with European standards can sell products both on the domestic market and supply to the markets of the European Union and the whole world.

It can be concluded that the creation of non-dairy products characterizes the strategy of reforming the dairy industry. To popularize plant-based beverages in Ukraine, food companies wishing to gain and maintain their strategic competitiveness should invest in the production of plant-based milk.

![Fig. 1. Production volumes of plant milk in Ukraine, thousand tons.](source: data from the State Statistics Service of Ukraine, Pro-Consulting assessment)
The prospects of investing in the creation of a plant-based milk production enterprise are evidenced by the current and forecasted monetary volume of the global market for alternatives to cow’s milk, carried out by Pro-Consulting (The profitability of the plant milk production business is published).

![Global vegetable milk market size, mln USD](image)

**Fig. 2. Volumes of the global vegetable milk market, mln. dollars.**

Source: data from the State Statistics Service of Ukraine, Pro-Consulting assessment

During the wartime period, there are prerequisites for a boost to the development of Ukraine's non-dairy products industry, as this market is specific in terms of the social mass of consumers and is determined by the importance of these products. In the face of challenges and threats, the state's agro-industrial policy needs to focus on supporting the development of the vegetable milk market in order to maintain food security in Ukraine and provide the population with quality food products in the volumes and assortment necessary for a sufficiently calorific and balanced diet.

The Main Directorate for Development and Support of Logistics of the Armed Forces of Ukraine monitors the organization of military catering and the supply of quality food products in order to improve, develop and find ways to optimize the food supply of the Armed Forces of Ukraine to provide servicemen with food at the expense of the state. This is an important and integral part of preparing for military duty in accordance with the Law of Ukraine "On the Statute of Internal Service of the Armed Forces of Ukraine" as amended on March 21, 2022 (Normative and legal framework of the Verkhovna Rada of Ukraine., 2022).

The Procedure for the Application of the Food Catalog in the Organization of Catering for the Personnel of the Armed Forces of Ukraine regulates the activities of responsible officials in the organization of catering for the personnel of the Armed Forces of Ukraine, according to which food is provided by a business entity according to the Food Catalog. At the same time, the catering of the personnel of the Armed Forces of Ukraine is carried out by the regular forces and means of military units in stationary and field conditions.

Nutrition of military personnel is of great importance for maintaining the combat capability of troops, which in most countries is carried out according to national norms of physiological needs with mandatory consideration of the level of physical activity, gender and age of military personnel.

The proper organization of servicemen's nutrition is achieved by fulfilling the following requirements:
- control over the safety of food products supplied to the personnel;
- rational use of food products;
- compliance with the dietary regime of servicemen, taking into account the nature and peculiarities of their service activities;
- preparation of tasty, nutritious, high quality and varied food according to technological documentation (recipe books, technological maps);
- mandatory compliance with culinary rules during food processing and cooking;
- proper storage of manufactured semi-finished products;
- proper operation and timely maintenance of equipment;
- compliance with sanitary and hygienic requirements during food processing, cooking, serving and storage of food, washing and storage of dishes, maintenance of the canteen premises, as well as personal hygiene rules by cooks and other canteen employees;
- introduction of progressive (modern) technologies aimed at creating maximum convenience for staff and optimizing processes.
- hygienic assessment of the rationality and quality of food based on the following: diet; compliance of the quality of ready meals with the requirements of regulatory documents based on the results of laboratory tests; nutritional value of food and ready meals based on the results of calculations and laboratory tests of chemical composition and energy value; completeness of the established nutrition standards for personnel; morbidity of personnel related to the state of nutrition; organization of dietary and medical care.

In 2018, the Armed Forces of Ukraine began an intensive transition to a new catalog-based food system, which allowed them to increase the range of products from 30 to 400 items and significantly improve the level and quality of nutrition for servicemen. In 2018, about 90 military units of the Armed Forces of Ukraine switched to the new food system. As of July 2019, 50% of the Armed Forces of Ukraine have switched to the new food system according to the catalog (The Ministry of Defense denies the reduction of food standards for the military., 2018).

Since the beginning of March 2020, all combat units of the Armed Forces of Ukraine have switched to the new food system according to the Food Catalog. The updated menu includes more than 400 items that can be used to make up the military's daily ration. The main condition is not to go beyond the cost of a daily kit, which is determined during auctions in the range of 67 to 74 UAH per daily kit (ukrinform.ua).

However, these food standards do not take into account the needs of many categories of military personnel. These include:
- people who do not consume meat and animal products for ethical reasons;
- believers, including Orthodox Christians, who eat vegan food during religious fasts;
- people whose body does not absorb lactose;
- people with digestive disorders who can restore their digestive function with vegetarian lean food.

In this regard, on June 27, 2022, citizen P.M. Pavlov posted a petition No. 22/147158-ep “On the Introduction of Vegetarian and Vegan Dry Rations for the Armed Forces of Ukraine” on the website of the Official Internet Representation of the President of Ukraine, which received the 25 thousand votes necessary for consideration by the head of state (The official website of the President of Ukraine V. Zelenskyy., 2022).

In response to this petition, the President responded that the issue of comprehensive provision of Ukrainian soldiers is one of the most urgent tasks of the security and defense sector of our country and one of the most important priorities, and the implementation of which is carried out in accordance with the approved norms of the Resolution of the Cabinet of Ministers of Ukraine of March 29, 2002, No. 426 "On the norms of nutrition for servicemen of the Armed Forces, other military formations and the State Service for Special Communications and Information Protection, police officers, privates and commanders" (V. Zelensky On the introduction of vegetarian and vegan dry rations for the Armed Forces of Ukraine).

In order to meet the needs of many categories of servicemen who do not consume meat and animal products, and to improve the nutrition system in the Armed Forces of Ukraine, taking into account the use of nutritional standards for non-dairy products, it will allow organizing the interaction of military authorities, command of military units (institutions, establishments) with business entities in the provision of catering services to the personnel of the Armed Forces of Ukraine.

This interaction can be realized through the organization of the transition of the food production process to plant substitutes of state production. In this case, in order to ensure transparent implementation of government orders, it would be appropriate to regulate the relationship between domestic producers of non-dairy products and the Main Directorate for Development and Support of Logistics of the Armed Forces of Ukraine through the rules of public-private partnership.

In addition, in accordance with the Procedure for Certification of Workplaces for Working Conditions, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 442 dated
August 1, 1992 (Resolution of the Cabinet of Ministers of Ukraine, 1992), based on the State Sanitary Norms and Rules "Hygienic Classification of Labor by Indicators of Hazardousness and Danger of Factors of the Production Environment, Severity and Intensity of the Labor Process", approved by the Order of the Ministry of Health of Ukraine No. 48 dated April 08. 04.2014 No. 248, registered with the Ministry of Justice of Ukraine on May 6, 2014 under No. 472/25249 (Regulatory framework of the Verkhovna Rada of Ukraine, 2014), will provide opportunities to provide milk or equivalent food products for free medical and preventive nutrition, and employees of the Armed Forces of Ukraine engaged in work with harmful working conditions.

Conclusions and perspectives of further research. The study found that the global dairy market has undergone significant transformations due to changes in consumer preferences, physical activity, climate factors, global demographic imbalances, etc. These circumstances have led to a decline in the quality of dairy products, a reduction in its production base, a drop in the competitive ability of products and formed the prerequisites for the development of the global market for dairy alternatives. The Ukrainian vegetable milk market is growing dynamically; in 2020, its volumes increased 13.6 times compared to the previous year. Domestic producers use affordable and acceptable raw materials, namely oats and buckwheat, to produce vegetable milk.

In wartime, there is a need to provide the population and the military with vegetable milk. The author proposes to amend and supplement the catalog of food sets of the Armed Forces of Ukraine by using useful food substitutes, the production of which involves the use of domestic agricultural raw materials and an increase in market added value. The author substantiates the need to determine the priority areas of state regulation of the domestic vegetable milk market, in particular, the regulation of relations between domestic producers of non-dairy products and the Main Directorate for Development and Support of Material Supply of the Armed Forces of Ukraine through the norms of public-private partnership.

The applied foundations of the development of the market for plant-based animal milk substitutes studied in the article form the basis for substantiating adaptive mechanisms for regulating the relevant market that can be implemented by public authorities at various levels of government. Prospects for further research in this area are the development of institutional and methodological support for the sustainability of the functioning and development of the Ukrainian market of plant-based milk substitutes in the wartime and postwar period.

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