Fodder production in Ukraine: Trends, problems and prospects

Iryna Voronetska
PhD in Economics
Institute of Feed Research and Agriculture of Podillya of NAAS
21100, 16 Yunosti Ave., Vinnytsia, Ukraine
https://orcid.org/0000-0002-1329-2722

Natalia Yurchuk
PhD in Economics
Institute of Feed Research and Agriculture of Podillya of NAAS
21100, 16 Yunosti Ave., Vinnytsia, Ukraine
https://orcid.org/0000-0002-7987-9390

Abstract. During the years of Ukraine’s independence, the provision of fodder to the livestock industry and their effective use remained a difficult and unsolved problem. The military aggression of the Russian Federation on the territory of Ukraine, economic, geopolitical, climatic instability, global food crisis exacerbated the pre-war problems and led to the emergence of new threats and challenges in fodder production. The purpose of the study is to assess the state and main trends of the feed market of Ukraine, the problems of the feed industry in the context of modern threats and challenges. The research uses generally accepted methods of scientific economic research, in particular: bibliometric, scientific abstraction and hypothesis, systematic and economic analysis, monographic, analysis and synthesis, complex, abstract-logical, induction and deduction, comparison and logical generalization. The main problems of Ukrainian fodder production were considered: the increase in the cost of material resources, energy resources, the increase in the cost of harvesting and storage of domestically produced fodder, the shortage of labor force due to migration and mobilization, extreme climatic conditions that affect the yield of fodder crops, the quantity and quality of fodder, non-compliance with crop rotation, low feed quality, regional redistribution of feed production and consumption, shortage of working capital, problems with reimbursement of value added tax, delays in customs clearance of imported material resources, high inflation, fixed exchange rate, problematic insurance/letter of credit instruments under export contracts, destruction of the main supply chains in Ukraine, change in the geography of exports, blockade of sea ports, high cost of created logistics chains, difficult access to the market of European countries from the point of view of import and product certification, limitation of throughput capacity of European logistics centers, etc. Attention is focused on the problems of fodder production in the de-occupied and front-line territories: a shortage of resources due to the loss of funds and property due to shelling and theft by the Russian military, the destruction of crops, the inability to export products, the death of farm animals due to military actions, damage and destruction of agricultural infrastructure and equipment, the impossibility of conducting technological operations, negative consequences for the land fund as a result of mining, artillery shelling, movement of heavy equipment, etc. The main results of the research can be used for scientific developments and in the practical activities of agricultural producers, assessing the impact of risks and threats on the fodder production industry of Ukraine

Keywords: fodder base; fodder crops; livestock of agricultural animals; feed market

Article’s History:
Received: 17.01.2023
Revised: 23.03.2023
Accepted: 25.04.2023

Suggested Citation:

Corresponding author
INTRODUCTION

In solving the problems of socio-economic development of the country, each of the branches of the economy has an important and appropriate place. Some directly create national resources, others create conditions and infrastructure for their production, availability, maximum benefit to all sections of the population. Agricultural production is not only one of the key sectors of the Ukrainian economy, ensuring national food security, but also directly affects the world agro-food sector and global food security. The invasion of the Russian Federation into Ukraine increased the negative impact after the COVID-19 pandemic, extreme climatic events on the sustainability of the world food system, while recently the role of the Black Sea region in the world food markets has been growing (Abay et al., 2023).

F. Lin et al. (2023) analyzed the potential impact of military aggression with duration uncertainty on global food security using a general equilibrium trade model. M. Al-Saïdi (2023) notes that the war in Ukraine has led to a serious global food crisis due to complex problems in the supply and increase in prices of agricultural products that arose due to COVID-19 and political and economic difficulties. Crisis phenomena in the global food and fertilizer markets related to the hostilities in Ukraine have large-scale and long-term consequences for price policy and global food security (Hassen & El Bilali, 2022).

In the report “Assessing Food Insecurity in 2022/23 at National and SubNational Levels in 50 Countries Vulnerable to the Effects of the Ukraine-russia Crisis” published by FAO (2022), it is noted that the current conflict between Ukraine and the Russian Federation increases the risks of further deterioration of the situation with food security at the global level.

In the work of V. Petrychenko et al. (2021) stated that the modern feed market is characterized by a reorientation towards the production of high-protein crops to solve the problems of food and feed protein with a steady trend towards the development of agricultural technologies, production and processing. The increase in the productivity of farm animals and the profitability of animal husbandry products requires balanced rations and a reduction in the cost of feed in the cost structure due to the use of high-protein feed. It is important for Ukraine to promote the development of the high-protein and loose feed market on an industrial basis, as well as the development of the production of organic feed and animal husbandry.

Fodder production is one of the elements of the national food chain, which provides livestock with high-quality and safe feed. Taking into account the dynamic development of the agricultural sector, the feed market, economic, geopolitical and climatic challenges, there is a need to research trends in feed production taking into account the risks and threats of modernity. Therefore, the task of this study was a detailed study of the situation in the feed market of Ukraine, as well as an analysis of economic, political, food, global challenges and problems of agricultural production.

MATERIALS AND METHODS

The theoretical and methodological basis of the research is a set of techniques and methods of scientific research, modern economic theory. The information base of the research is scientific developments of Ukrainian and international scientists on the economics of fodder production, legislative acts of Ukraine, official statistical materials of Ukraine, the USA and the EU.

To achieve the goal of the research, general scientific and special methods were used: bibliometric – to determine the state of the researched problem, scientific abstraction and hypothesis; system and economic analysis – to assess the state of the fodder industry; monographic – for assessing the state of feed production in dynamics; analysis and synthesis – to assess the export potential of feed production in Ukraine, determine the factors affecting the feed market; abstract-logical method, method of induction and deduction, comparison and logical generalization, complex method – for summarizing challenges, threats and problems of the fodder production industry of Ukraine, tabular – for illustrating the obtained results, graphic – for visual presentation of economic data, theoretical and methodological research material.

RESULTS AND DISCUSSION

The current state of fodder production is characterized by a decrease in its potential, which occurs against the background of a general decrease in the pace of development of animal husbandry, a decrease in labor productivity in this field due to the limitation of opportunities to update the material and technical base and an increase in the share of the cost of feed in the cost of animal husbandry products (Korniyuch et al., 2021).

The primary task on the way to the formation of a system of sustainable development in Ukraine is to increase the volume of production of animal husbandry products. Ukrainian animal husbandry develops in two ways: extensive and intensive. The first involves the suspension of the process of reducing the number of agricultural animals and the formation of a highly productive herd, the necessary fodder base and decent maintenance. The second is based on increasing the productivity of farm animals due to the effective use of high-quality feed and balanced diets. Today, both the first and the second method remain relevant, since the
The fodder industry is divided into two main areas: field and grassland fodder production. The state of development of field fodder production in Ukraine has remained unchanged over the past few years and is characterized by a reduction in the area under fodder crops.

At the same time, research by scientists V. Petrychenko et al. (2021) and the practice of individual farms shows that this industry is quite profitable and a priority for Ukraine. Along with the negative trends listed above, there is an increase in productivity of cows, over the past seven years, the productivity of cows in all categories of farms has increased from 4644 kg per year to 5435 kg, or by 17%, even in the conditions of war in 2022, the increase in productivity amounted to 5.4% previous year 2021. It is clear that in agricultural enterprises the productivity of cows grows at faster rates by 14% and 4.5%, respectively (State statistics service of Ukraine, n.d.; United States department..., n.d.). The unstable price situation on the milk market reduces the interest of households in the development of dairy farming.

The main tasks for improving the market of milk and dairy products are: creation of an effective legislative framework for milk processing enterprises; forming a market for high-quality safe feed, stopping the reduction of dairy production, developing a protectionist policy, creating conditions for healthy competition and protecting consumers from low-quality products (Dzhedzhula et al., 2018; Hladiy & Prosovych, 2022). The development of livestock agribusiness has undergone a complex process, which is associated with an increase in the concentration of the industry in large farms and a decrease in small and medium-sized agricultural enterprises. One of the main tasks for agricultural enterprises specializing in animal husbandry is the organization and formation of the fodder base, which directly affects the level of productivity of farm animals, which depends on their feeding by 50-80%.

Historically, Ukrainian fodder production has never developed as an autonomous industry, although world practice convinces of the real possibilities of producers of various types of fodder to act as independent subjects of both the internal and external agrarian market, focusing on the market environment, the needs of consumers (as producers – animal breeders, as well as various intermediary structures of the trade chain), as well as own production potential and the results of internal marketing research. In contrast to them, households function at the expense of self-sufficiency and the use of public pastures, and in this way maintain a relative balance in the fodder market. However, in general, the transfer of production capacities to households has negative consequences, as it is characterized by an extensive method of management and is based primarily on the high labor intensity of the production process.

The fodder industry is divided into two main areas: field and grassland fodder production. The state of development of field fodder production in Ukraine has remained unchanged over the past few years and is characterized by a reduction in the area under fodder crops.
During the period 1990-2021, the area under fodder crops decreased from 11.9 million hectares to 1.5 million hectares, or by 87%, and during the period 2000-2021 by 78.2%. Over the past 12 years, the area under grasses has significantly decreased: perennial grasses – by 2036.7 thousand ha or 71.2%, annual grasses – by 1489.3 thousand ha or 84.9%. However, the share of perennial grasses in the total area under fodder crops increased by 12.9%, while annual grasses decreased by 7.6%. In general, the share of fodder crops in the total sown area decreased from 26% to 5.4%, or by 20.6%, in 2000-2021 (Fig. 1). The fodder production sector is divided into two main areas: field and grassland fodder production. The development of field fodder production in Ukraine has remained unchanged over the past few years and is characterised by a reduction in the area under fodder crops. During the period 1990-2021, the area under fodder crops decreased from 11.9 million hectares to 1.5 million hectares, or by 87%, and during the period 2000-2021 by 78.2%. Over the past 12 years, the area under grasses has significantly decreased: perennial grasses – by 2036.7 thousand ha or 71.2%, annual grasses – by 1489.3 thousand ha or 84.9%. However, the share of perennial grasses in the total area under fodder crops increased by 12.9%, while annual grasses decreased by 7.6%. In general, the share of fodder crops in the total sown area decreased from 26% to 5.4%, or by 20.6%, in 2000-2021 (Fig. 1).

**Figure 1. Share of fodder crops in the total sown area in Ukraine**

*Source: developed by the authors according to the State statistics service of Ukraine (n.d.)*
The most important task for the development of industrial fodder production in modern conditions is the restoration and improvement of industrial and economic relations both with suppliers of grain and industrial waste during the processing of agricultural products, and with consumers of compound feed. According to experts (Petrychenko et al., 2021), the growth of feed production is adequate to the growth of animal husbandry needs, and their deficiency will still be covered by the import of feed components.

In this case, regulatory and legal support of fodder production plays an important role. In 2020, Law of Ukraine No. 2264-VIII "On the safety and hygiene of fodder" (2017), which defines the legal and organizational principles of guaranteeing the safety of fodder in the process of its production, circulation and use, in particular, establishes requirements for hygiene, labeling, packaging and presentation of fodder, regulates relevant public relations between market operators and state authorities.

In the last decade, poultry farming began to develop within large holding agro-formations created on the basis of vertical integration. Such complexes also include combined feed plants, which independently

---

**Table 1. Production dynamics of the main types of industrial feed in Ukraine, thousand tons**

<table>
<thead>
<tr>
<th>Types of feed</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound feeds in total</td>
<td>6192</td>
<td>6232</td>
<td>5984</td>
<td>6025</td>
<td>6464</td>
<td>6302</td>
<td>5657</td>
<td>8.6</td>
</tr>
<tr>
<td>- for pigs</td>
<td>1395</td>
<td>1440</td>
<td>1107</td>
<td>1210</td>
<td>1229</td>
<td>1236</td>
<td>1264</td>
<td>9.4</td>
</tr>
<tr>
<td>- for cattle</td>
<td>722</td>
<td>738</td>
<td>592</td>
<td>724</td>
<td>701</td>
<td>744</td>
<td>645</td>
<td>10.7</td>
</tr>
<tr>
<td>- for poultry</td>
<td>3884</td>
<td>4032</td>
<td>3745</td>
<td>4091</td>
<td>4534</td>
<td>4522</td>
<td>3748</td>
<td>3.5</td>
</tr>
<tr>
<td>Premixes for farm animal feed</td>
<td>60.2</td>
<td>52.8</td>
<td>55.3</td>
<td>67.9</td>
<td>78.6</td>
<td>60.0</td>
<td>38.3</td>
<td>36.4</td>
</tr>
</tbody>
</table>

*Source: compiled by the authors based on data from the State statistics service of Ukraine (n.d.)*
supply livestock units with fodder, including combined feed. About half of the production of compound feed in Ukraine is accounted for by such compound feed plants. The raw material base for feed mills is formed by producers of grain (corn, fodder wheat) and oil crops (soybean, sunflower, rapeseed). If in 2000, Ukraine produced 10.2 million tons of wheat, of which 16.7% was used for livestock and poultry feed, and only 0.8% was exported, then in pre-war 2021, production increased to 33 million tons (almost in 3 times), for feed – 12.1%, export – 57.1%. Russian aggression on the territory of Ukraine in 2022 caused a sharp decrease in production to 21 million tons (36.4%), the share of domestic consumption increased to 19%, and exports to 64.3% (State statistics service of Ukraine, n.d.).

A similar situation developed on the corn grain market (Fig. 2). During the period 2000-2021, Ukraine increased the production of this crop from 3.8 million tons to 42 million tons or 11 times, exports increased from 10.3% to 64%, and domestic consumption from 57.2% to 18.5%, and overall domestic consumption decreased by 50%. In the last year of 2022, production decreased in relation to the previous year 2021 by 36%, consumption by 48.5%, exports by 16.6%.

Figure 2. Production, consumption and export of corn for grain, thousand tons

Source: developed by the authors based on the State statistics service of Ukraine (n.d.), United States department... (n.d.)

Disruption of logistics, export problems, blockade of sea ports, occupation of commodity production zones are the main reasons for destabilization of the grain sector in 2022. In general, during the years of independence, the oil and fat industry developed, where, along with the traditional culture of sunflower, the production of soybeans and rapeseed is developing. The increase in the production potential of these crops occurred due to the expansion of sown areas and increased yields. For the economy of Ukraine, these crops are of strategic importance as both food (oil) and feed crops (meal, cake). Ukrainian sunflower, meal and oil are in demand on the world market and form a significant part of the balance of feed protein on the European market. The value of protein-oil crops as the most important source of vegetable protein and oil increases in connection with the growth of the population, in the formation of food resources, adequate nutrition, improvement of health and prolongation of human life. EU countries import up to 14 million tons of soybeans and 18.3 million tons of soybean meal from the USA, Brazil, Canada, and Paraguay. Ukraine provides EU countries with 37% rapeseed, 73% sunflower meal and 28% rapeseed oil. The use of meal of protein-oil crops in feeding animals and poultry is a new era, the main and strategic direction in the supply of high-protein feed, ensuring complete feeding and increasing their productivity (Petrychenko et al., 2021). In the structure of world meal production, soybean meal makes up 68.4% of all meal. Soybean meal differs from other high-protein ingredients in its balanced amino acid composition, and has feeding features that are still little known in Ukraine. In terms of fodder benefits, soybean meal surpasses all other vegetable sources of protein, has the highest nutritional value, the widest use in feeding, is suitable for all types of animals, poultry and fish.
The use of sunflower and rapeseed meal in the rations of feeding cows, which leads to an increase in the protein content, helps to strengthen the metabolic processes in the animal’s body, improves their physiological condition and increases milk productivity. The practice of using these types of meal is quite common in European countries (European Union, n.d.). It is preliminarily estimated that the export of sunflower meal from Ukraine in 2022/2023 MR will make up 77.5% of gross production, which is 4.1% more than the level of 2021/2022 MR (Table 2).

### Table 2. Production, consumption and export of sunflower seed meal, thousand tons

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Domestic consumption</th>
<th>Exports</th>
<th>Share of exports in production, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010/2011</td>
<td>3296</td>
<td>390</td>
<td>2927</td>
<td>88.8</td>
</tr>
<tr>
<td>2015/2016</td>
<td>4811</td>
<td>1000</td>
<td>3817</td>
<td>79.3</td>
</tr>
<tr>
<td>2016/2017</td>
<td>6030</td>
<td>1300</td>
<td>4807</td>
<td>79.7</td>
</tr>
<tr>
<td>2017/2018</td>
<td>5679</td>
<td>1300</td>
<td>4238</td>
<td>74.6</td>
</tr>
<tr>
<td>2018/2019</td>
<td>6112</td>
<td>1350</td>
<td>4808</td>
<td>78.7</td>
</tr>
<tr>
<td>2019/2020</td>
<td>6455</td>
<td>1350</td>
<td>5181</td>
<td>80.3</td>
</tr>
<tr>
<td>2020/2021</td>
<td>6579</td>
<td>1275</td>
<td>4396</td>
<td>77.4</td>
</tr>
<tr>
<td>2021/2022</td>
<td>4460</td>
<td>1200</td>
<td>3275</td>
<td>73.4</td>
</tr>
<tr>
<td>2022/2023</td>
<td>4130</td>
<td>1050</td>
<td>3200</td>
<td>77.5</td>
</tr>
<tr>
<td>Growth index</td>
<td>1.25</td>
<td>2.69</td>
<td>1.09</td>
<td>*</td>
</tr>
<tr>
<td>Absolute growth, %</td>
<td>834</td>
<td>660</td>
<td>273</td>
<td>11.3</td>
</tr>
</tbody>
</table>

*Source: compiled by the authors based on data from the State statistics service of Ukraine (n.d.), United States department... (n.d.)*

Since 2010, the total export value of sunflower meal has increased by 9.3% with a 25% increase in production. Ukraine has long held a leading position in the world market of sunflower meal: in 2020/2021 MR – 28%, in 2021/2022 MR – 23.4%, in 2022/2023 it is expected to be at the level of 20.1%.

Canola meal provides an amino acid balance that targets the required amino acid profile of the pig better than any other plant protein (Hein, 2020). The production of rapeseed meal for the period 2010/2011 MR 2022/2023 MR is expected to increase more than 2 times, domestic consumption by only 33%, export by 59%.

Due to the significant volume of solvent demand, the market of the European Union is able to continue to absorb products produced in Ukraine. The needs of the countries of the European Union are covered in protein by only 38% (European Union, n.d.). Taking into account the current trends, we can safely predict a further increase in the volume of deliveries to this market. However, there is a threat that Ukraine will be limited only by production capacity. Therefore, there is a need to shift the emphasis on the processing of grain and oil crops, in particular soybean and rapeseed.

The pre-war problems and challenges of fodder production were complicated by the military aggression of the russian federation from February 2022. Economic, political and ecological instability, the aggravation of the global food problem, led to the emergence of new threats and challenges for fodder production in Ukraine.

Research by scientists V. Petrychenko et al. (2022) testifies that under the conditions of martial law in Ukraine, logistical connections for the supply of fodder and the sale of livestock products are disrupted, which prompts producers to look for alternative options. Ukraine imported some feed and veterinary drugs, but due to the war and logistical problems, their purchase is currently limited. Production of the projected amount of fodder is complicated by a shortage of energy and human resources, as well as unstable weather conditions.

The current state of the Ukrainian market of fodder and fodder resources calls into question its effective performance of the function of ensuring the food security of the state in terms of the production of livestock products. Feed supply is based on the use of domestically produced feed, increased competition between Ukrainian commodity producers and suppliers of biological feed additives, and the low level of development of industrial feed production (Voronetska et al., 2020). Thus, it is possible to identify a number of key factors inhibiting the development of fodder production in Ukraine (Fig. 3).
The military aggression of the Russian federation in Ukraine led to an increase in feed and energy prices, a shortage of feed raw materials, and problems in logistics chains, which lead to an increase in production costs. Issues related to the neutralization of the consequences of hostilities in de-occupied regions and front-line territories require special attention (Fig. 4).

**Figure 3. Problems and challenges of the fodder production industry in Ukraine**

**Source:** compiled by the authors according to Agribusiness of Ukraine during the war... (2022)
In order to provide animal husbandry with high-quality fodder balanced by the content of nutrients, it is necessary to develop the fodder production system, including the field and onion-pasture direction (Yurchuk et al., 2022). Increasing the productivity of forage crops can be achieved in two ways: by optimizing the structure of forage crops on irrigated and non-irrigated lands and by using energy-saving technologies for their cultivation (Holoborodko et al., 2020).

Databases of promising breeding material of fodder crops have been formed in Ukraine (The state register of plant varieties..., n.d.). Every year, Ukrainian scientists and breeders create and introduce new high-yielding varieties of forage crops, legumes and grasses with increased quality indicators and productivity. In addition, fodder crops can be used for reclamation of degraded, unproductive and technologically polluted lands, organic farming, etc.

The experience of other countries shows that in the conditions of globalization, commodity fodder production is developing, as the most optimal way of market orientation is the formation of specialized fodder production enterprises to meet the needs of small and medium-sized agribusiness (Sprynchuk, 2020).

I. Cherevko (2022) proposes to apply the Polish experience in the development of fodder production and the provision of livestock feed in Ukraine. Noting that based on the key trends in the development of fodder production in the world, the main ways of its further development in Ukraine relate to increasing the level of their ecological safety, developing the use of active feed additives, in particular of a medicinal nature, optimizing the structure of fodder and feeding animals, improving the quality of fodder and the possibility of changing their structure production, intensification of fodder production by households, increasing the efficiency of fodder use, specialization in fodder production, innovation and digitalization of the industry, which will become fully possible in Ukraine after the end of hostilities and ensuring the possibility of safe farming in the de-occupied territories (Cherevko, 2022).

To ensure the sustainability of agriculture, local resources for agricultural production and feed production, such as land, forests, water ecosystems, must be protected from pollution and over-extraction of nutrients. It is necessary to improve sustainable agricultural practices by increasing the efficiency of nutrient use, increasing nutrient recycling, reducing waste, increasing agricultural production, reducing greenhouse gas emissions, and increasing agricultural productivity through the integration of industries. The integration of agricultural production has enormous potential to improve nutrient recycling or recovery (Adegbeye et al., 2020). Research confirms that the transfer of innovations of self-renewing agriculture allows for the rational use of natural resources both in terms of ecological and economic components and to achieve effective and long-term growth (Petrychenko et al., 2022).

The significant potential of the feed production industry of Ukraine allows us to meet not only our own needs for feed protein, but also to enter the global
Feed market as a supplier of deep processing products. A comprehensive approach with support at the local, state and international levels is necessary to solve the problems and challenges of fodder production and to restore the activities of agricultural producers. It is necessary to carry out the restructuring of sown areas, agro-technological approaches to the technology of growing fodder, use special equipment for demining agricultural lands, consolidate at the international and state levels support for the fodder industry, develop special programs to stimulate the development of animal husbandry, first of all dairy cattle breeding in the small and medium segment agribusiness. It is necessary to develop sustainable ecologically safe fodder production, which will contribute to the development of all branches of agriculture and create opportunities for the development of value-added production.

CONCLUSIONS
Animal husbandry of Ukraine plays an important role in ensuring food security and the development of the agricultural sector, although the share of the livestock industry in the structure of gross agricultural production in 2021 is only 18.6%. Cattle population decreased by 75.6% (including cows by 72.6%), pigs by 34.7% during the period 2000-2023. The decrease in the number of cows causes a decrease in gross milk yield, the volume of which in 2022 was 7,160 thousand tons, which is 32.5% less than the level of 2015. The level of productivity of farm animals depends on their feeding by 50-80%, so the main task of producers is to provide high-quality fodder for farm animals. The development of field fodder production in Ukraine is characterized by a 78.2% reduction in fodder crops for the period 2000-2021. Over the past 12 years, the area sown with perennial grasses has significantly decreased by 71.2%, annual grasses by 84.9%. Concentrated fodder is the basis of the fodder base of animal husbandry, their use in 2021 compared to 2000 has increased three times. The raw material base for concentrated feed is grains (corn, fodder wheat) and oil crops (soy, sunflower, rapeseed).

The military aggression of the Russian Federation in Ukraine led to deepening of the problems of the agricultural sector, in particular, fodder production. The projected increase in the demand for livestock products requires an increase in feed production. Fodder plays a central role in ensuring adequate feeding of animals. A diet balanced in terms of all nutrients and at a level that meets the production goal, taking into account the animal’s physiological state, is a prerequisite for achieving high and sustainable animal productivity.

The production of the projected amount of fodder in the conditions of martial law is complicated by the shortage of energy and human resources. In Ukraine, it is necessary to increase its own production of feed, increase its effective use, which will reduce dependence on imported feed ingredients, as well as reduce the cost of feeding. In conditions of limited resources, the problem of fodder shortage can be solved thanks to sowing of annual and perennial grasses, grain-legume mixtures, grass mixtures, because scientifically based mixtures of fodder crops will be able to almost completely provide nutrients to farm animals and form their own market for fodder. Prospects for further scientific research consist in the formation of measures for the restoration and development of fodder production in Ukraine under the influence of threats created by the military aggression of the Russian Federation.

ACKNOWLEDGMENTS
None.

CONFLICT OF INTEREST
None.

REFERENCES


Анотація. За роки незалежності України забезпечення кормами галузі тваринництва та їх ефективне використання залишались складною і невирішеною проблемою. Військова агресія РФ на території України, економічна, геополітична, кліматична нестабільність, глобальна продовольча криза загострила довоєнні проблеми і зумовила виникнення нових загроз і викликів у кормовиробництві. Метою дослідження є оцінка стану і основних тенденцій ринку кормів України, проблем кормовиробничої галузі в контексті сучасних загроз і викликів. У дослідженні використано загальноприйняті методи наукових економічних досліджень, зокрема: бібліометричний, наукової абстракції та гіпотези, системного та економічного аналізу, монографічний, аналізу і синтезу, комплексний, абстрактно-логічний, індукуції та дедукції, порівняння та логічного узагальнення. Було розглянуто основні проблеми українського кормовиробництва: зростання вартості матеріальних ресурсів, енергоресурсів, здорожншення процесів заготівлі і зберігання кормів власного виробництва, дефіцит робочної сили внаслідок міграції і мобілізації, екстремальні кліматичні умови, які впливають на урожайність кормових культур, кількість та якість кормів, недотримання сівозмін, низька якість кормів, регіональний перерозподіл виробництва і споживання кормів, дефіцит обітових коштів, проблеми з відшкодуванням податку на додану вартість, затримки з митного оформлення імпортованих матеріальних ресурсів, високий рівень інфляції, фіксований валютний курс, проблемні інструменти страхування/акредитивів за експортними контрактами, руйнування основних ланцюгів постачання в Україні, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експорту, блокада морських портів, високий рівень інфляції, зміна географії експ