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Latvia University of Life Sciences and Technologies

Faculty of Economics and Social Development

24th International Scientific Conference

ECONOMIC SCIENCE FOR RURAL DEVELOPMENT 2023

**10-12 May 2023, Jelgava,
Latvia**

ECONOMIC SCIENCE FOR RURAL DEVELOPMENT

Proceedings of the
International Scientific Conference

No 57 Circular Economy: Climate Change, Environmental Aspect,
Cooperation, Supply Chains

Efficiency of Production Process and Competitive of Companies

Integrated and Sustainable Regional Development

New Dimensions in the Development of Society

Rural Development and Entrepreneurship

Sustainable Bioeconomy

ISSN 2255-9930 on line

ISBN 978-9984-48-415-0 (E-book)

Abstracted / Indexed: AGRIS, CAB Abstracts, Crossref, EBSCO Academic Search Complete, EBSCO Academic Search Ultimate, EBSCO Central & Eastern European Academic Source, EBSCO Discovery Service, Clarivate Analytics Web of Science™, Google Scholar, Primo Central (ProQuest-ExLibris).

<https://www.esaf.lbtu.lv/lv/proceedings-economic-science-for-rural-development>

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Preparation of the proceedings and organization: January 2023 – May 2023

Conference: 10-12 May 2023

Researchers from the following higher education institutions, research institutions, and professional organizations presented their scientific papers at the conference:

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Foreword

The international scientific conference „Economic Science for Rural Development“ is organized annually by the Faculty of Economics and Social Development of Latvia University of Life Sciences and Technologies.

The proceedings of the conference are published since 2000.

The scientific papers presented in the conference held on 10–12 May 2023 are published in one thematic volume:

No 57 Circular Economy: Climate Change, Environmental Aspect, Cooperation, Supply Chains
Efficiency of Production Process and Competitive of Companies
Integrated and Sustainable Regional Development
New Dimensions in the Development of Society
Rural Development and Entrepreneurship
Sustainable Bioeconomy

The proceedings contain scientific papers representing not only the science of economics in the diversity of its sub-branches, but also other social sciences (sociology, political science), thus confirming inter-disciplinary development of the contemporary social science.

This year for the first time the conference includes the section on a new emerging kind of economy—bioeconomy. The aim of bioeconomy is to use renewable biological resources in a more sustainable manner. Bioeconomy can also sustain a wide range of public goods, including biodiversity. It can increase competitiveness, enhance Europe's self-reliance and provide jobs and business opportunities.

The Conference Committee and Editorial Board are open to comments and recommendations concerning the preparation of future conference proceedings and organisation of the conference.

Acknowledgements

The Conference Committee and editorial Board are open to comments and recommendations for the development of future conference proceedings and organisation of international scientific conferences.

We would like to thank all the authors, reviewers, members of the Programme Committee and the Editorial Board as well as supporting staff for their contribution organising the conference.

On behalf of the conference organisers

Anita Auzina

Professor of Faculty of Economics and Social Development
Latvia University of Life Sciences and Technologies

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ANALYSIS OF TRENDS IN THE DEVELOPMENT OF FLORICULTURE IN UKRAINE

Uliana Marchuk¹, PhD of Economics; **Olena Kolesnikova**², PhD of Economics;
Yana Ishchenko³, PhD of Economics and **Vasyl Bulychov**⁴, Postgraduate student

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Abstract. The article presents an overview of the current state of the flower market and the factors affecting the formation of the market in Ukraine, the study of the main trends and prospects for development. Given the demand for flower products, it has been proven that the floriculture in the local market has good opportunities for development thanks to the use of modern marketing support tools, including the use of online technologies.

In the conditions of European integration processes, increasing the competitiveness of floristic enterprises is gaining more and more importance.

The purpose of the article is to study the essence and content of floriculture and production features and factors of competitiveness of enterprises growing floriculture products in Ukraine and the world.

To achieve the goal of the article, the following tasks are identified: to characterize the development of the flower industry and the presence of demand for flower products on the world market and the market of Ukraine; carry out an assessment of the profitability of the floristic business and the possibility of expanding logistics routes using IT technologies; outline the influence of the terms of passing customs procedures and customs clearance on the effectiveness of the sale of floriculture products.

Information on domestic participants in the flower industry is provided and problems related to the development of flower growing in Ukraine and the sale of finished products are identified. The Ukrainian flower business cannot be considered a new industry for Ukraine, but it is highly profitable and has a steady growth trend.

Key words: floriculture, analysis, export, import, customs clearance.

JEL code: M48, M10, F01, Q13

Introduction

Floriculture is one of the aesthetically pleasing types of agriculture - the field of plant breeding, which deals with the selection, reproduction, growing of plants for decorative purposes: cutting plants for bouquets, growing potted plants. The introduction of the latest technologies makes it possible to obtain desired plants throughout the year, which makes it possible to supply finished products to the market throughout the year.

Floriculture is an important topic for research, so recently in theory and in practice, more and more attention is being paid to the complex solution of the problem of increasing the competitiveness of floristry enterprises and their effective functioning.

To study the researched problems, comparative research methods were used, as well as abstract-logical approaches to finding and justifying the methods of reflection in the accounting and the problems of customs clearance of transactions with products of the flower industry. Evaluation methods based on indicators and factors of the competitiveness of the enterprise can provide an understanding of the effectiveness of the sustainable development of the enterprise.

The first significant contributions to the study of the theoretical foundations and practical problems of the functioning and development of the flower market in Ukraine were made by such Ukrainian scientists as M. P. Butko, S. M. Kvasha, I. V. Pasichnichenko, P. T. Sabluk, V. A. Khodarchenko and others.

Among the foreign scientists, it is worth highlighting Kenneth Button (Kenneth Button, 2020), that mentioned that "Floriculture is an important employer, and earner of foreign exchange...", as well as

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Gelaye, Y. (2023) who researched the status and natural impact of floriculture production. Adherence to international standards and the creation of an opportunity to meet these standards were studied in their works by: Gebreeyesus, M. (2015), and Gutsalenko L. (2020). Chandel (2022) and Stephen Chandler & Yoshikazu Tanaka (2007) studied the influence of environmental signals on the production of floriculture products.

Research results and discussion

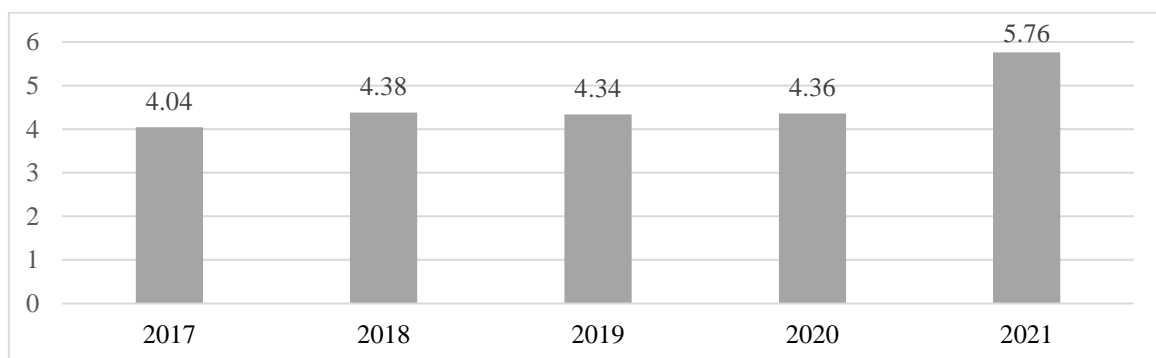
Floriculture, also known as flower farming, is a discipline of horticulture that is concerned with the cultivation of flowers. In other words, floriculture is concerned with growing and marketing ornamental flowers. The global floriculture market is segmented on the basis of type, end use, and region.

Floriculture crops include flower beds, indoor plants, indoor flowers, garden and pot plants, cut cultured greens and cut flowers. As a rule, flowers are used for decoration, aesthetics and to exchange greetings. Flowers are associated with prosperity and well-being, which benefits the floriculture market worldwide.

Floriculture products, have the highest profit per unit area among compared to other agricultural products (Adebayo, I. A., 2020).

The floristry market is the flower industry, one of the main industries in many developing countries, so it is a dynamic, global and fast-growing industry that has achieved significant growth rates over the past few decades.

The international trade in flowers and plants is the Netherlands (Figure 1), thus the Netherlands is Europe's flower market core due to its logistics position within Europe and established international trade relations within the flower business.



Source: ITC Trade, 2023

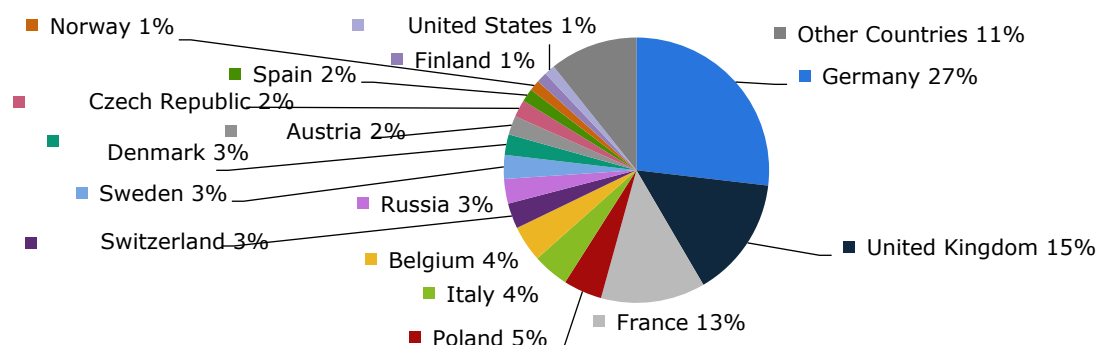
Fig. 1. Netherlands Floriculture Market: Value in USD Billion, Export, Cut Flowers, Netherland, 2017-2021

The Dutch company RoyalFloraHolland, is Europe's main marketplace for cut flowers, and has 6 places of auction, where auctions are held 5 times a week. Royal FloraHolland is a co-operative company founded in 2008 after a merger between FloraHolland and Bloemenveiling Aalsmeer. Today Royal FloraHolland is the largest international marketplace for the floriculture industry in the world, transporting thousands of different plant and flower varieties around the world through its global logistics systems.

RoyalFloraHolland exports to more than 140 countries around the world, including Germany, Great Britain, France, Belgium, Poland and Italy. According to the International Trade Center (ITC) trade map, in 2021, the Netherlands exported 680,090 metric tons of cut flowers valued at USD 5.7 billion (Netherlands floriculture market..., 2023).

The statistics (Figure 2) displays the distribution of total export of flowers and plants by Royal FloraHolland in 2020, by country.

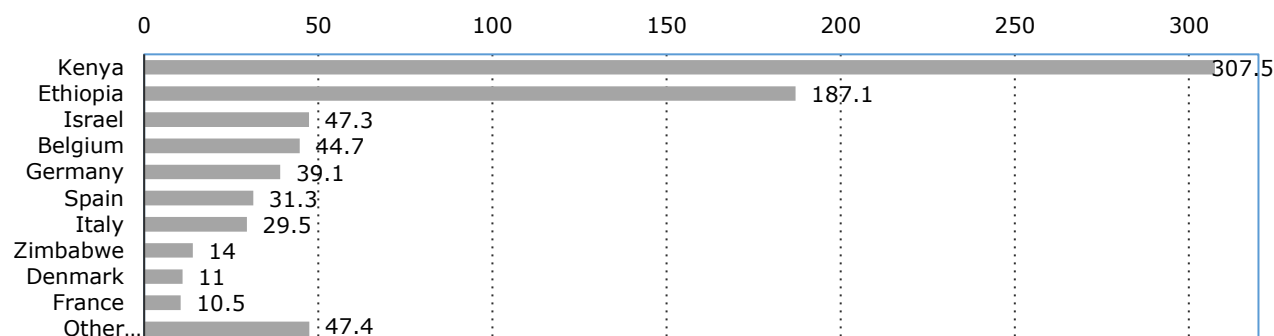
According to the experts, the ratio of imports and domestic production in general is 40% to 60% in favour of production in Ukraine. It is worth noting that the share of imported and domestic products differs depending on the types of ornamental plants. The basis of own production consists of such species as conifers, shrubs, and perennial grasses. There are more imports in the hardwood category.



Source: Flower market in the Netherlands - Statistics and Facts, 2021

Fig. 2. Distribution of total export of flowers and plants by Royal FloraHolland in 2020, by country

The main importers of flowers for auctions in RoyalFloraHolland (from 60 countries of the world) are the Netherlands, Kenya, Israel, Ecuador, Zambia and Germany (Figure 3). The largest sales markets are the USA, Russia and EU countries.



Source: Flower market in the Netherlands - Statistics and Facts, 2021

Fig. 3. Top 10 imported products of Royal FloraHolland in 2020, by revenue (in million euros)

The Netherlands is also the main importer of floriculture and decorative plant products to Ukraine, and cooperation with them will continue to deepen.

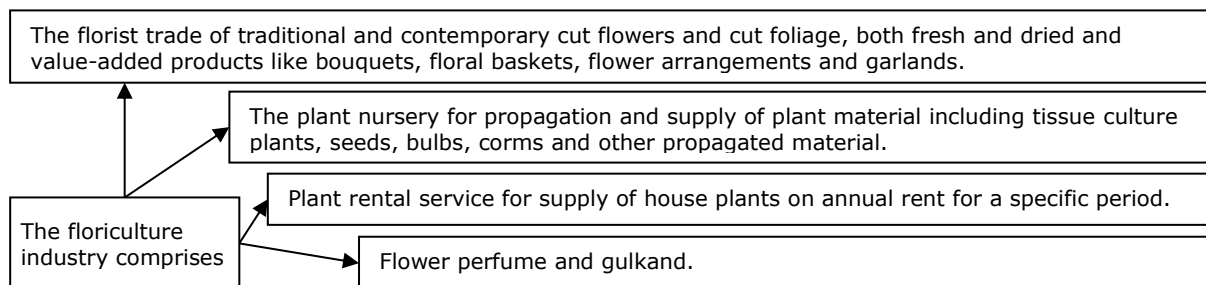
Ukrainian imports consisted mainly of flowers (75% of the value and 71% of the volume of imports). Ornamental plants (for landscaping, gardens and other outdoor uses) accounted for only 25% of the value of imports, but 29% of the volume (weight) of imports.

In the flower sector, Ukrainian importers bought the following categories from other countries:

- cut flowers (49% of import value). The main types of flowers are roses, chrysanthemums and carnations.
- potted / indoor plants (29% of import value);
- flower bulbs (29% of import value). Tulip bulbs dominate the import structure of bulbs.

According to the Prodanchuk M. A. and others (2021), the current state and outlook for the development of the global economic environment calls into question the ability of international and national institutions to regulate the activities of large multinational corporations.

The relatively stable demand among floral products, where on the one hand consumers are almost the entire population, and on the other, enterprises and organizations of all forms of ownership, since all categories of consumers of floral products have their own needs. The floriculture industry comprises the elements revealed in the Figure 4.



Source: formed by the authors on the basis of conducted research.

Fig. 4. **Composition of the floriculture industry**

The most widely accepted world standards for sustainability reporting allows businesses and governments all over the world to understand and convey their influence on essential sustainability problems such as climate change, governance, social well-being which promotes to establish social, environmental and economic advantages for everybody (Yevdokymova, 2019).

Manufacturers in developing economies cultivate high-quality flowers and export them to developed economies such as Europe, the US, Japan and others. But the COVID-19 outbreak, which began in Wuhan, China, in December 2019, has spread across the globe; and this pandemic has heavily impacted and disrupted the EU Flower and Live Plants sector and market since early March 2020 (EU-wide survey..., 2021). Consumer goods, horticulture, and floriculture are among the world's major industries suffering serious disruptions in the form of supply chain breaks as a result of this pandemic.

To promote the floristic business online during the pandemic, Ukrainian companies developed websites with their products, opened online boutiques and groups in social networks, where they actively advertised their products and provided profitable promotions and discounts. Moreover, with the help of the use of social networks in floristry, you can organize live broadcasts to show the products and the place of their storage, which will create a certain level of trust in the company among customers.

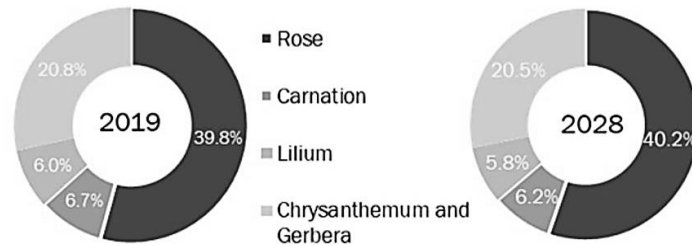
Floriculture can be divided into four products: flowers, cut foliage, plants and bulbs. The EU (hereafter, referring to the 27 members countries or EU-27) is the world's largest floriculture market, accounting for approximately two-thirds of the world's imports (Gebreyesus, M. (2015), The Cut Flowers segment held the largest market share accounting for 83% in 2021. The segment growth is attributed to the rising popularity of cut flowers among consumers, thanks to their sweet odor and beauty (Floriculture Market-Global Industry Analysis..., 2022).

The cut flower market in Europe is expected to grow at the highest CAGR of 4.5% during 2020-2028, and an increase in demand for cut flowers for decorative purposes is expected to boost the growth of the market (Figure 5) (Cut Flowers Market Trends..., 2021).

The market of floristic products is a system of relations between producers/sellers and buyers and intermediaries regarding the organization of production, distribution and exchange of floristic goods and provision of services, their consumption, as well as reproduction throughout the cycle of living and tangible labor. The production of floral products itself has its own characteristics:

- irregularity of production and corresponding fluctuation of demand and prices during the year;
- low level of flower processing;

- technological difficulties (tillage, care and protection of plants from pests and diseases, harvesting, storage, floristry and design etc.);
- organizational and economic measures (division of labor, forms of its organization and production, development of market infrastructure etc.).



Source: *Cut Flowers Market Trends...*, 2021

Fig. 5. **Cut flowers market by flower type – 2019 and 2028**

Besides the floristic market has a multifaceted structure, which is a collection of its individual interconnected parts elements, the structural integrity of product diversity, but in certain proportions and interdependence in a specific territory. In addition, as Hnylytska, L. (2021) pointed the current situation, domestic enterprises face many external threats caused by a high level of globalization, uncertainty of market conditions, unfair competition, imperfect commercial legislation, limited financial resources, corruption and fraud.

The modern world economic system is undergoing significant transformations and the transition to the digital economy (Ostapiuk N., 2022). And the growing e-commerce industry along with penetration of the internet and smartphone across the globe are driving the growth of the floriculture market. In addition, the shift to virtualized trade network aids in logistics coordination and information availability in the floriculture supply chain. It helps all participants in the supply chain management to access real-time information in the floriculture supply chain and ensures smooth, cost-effective, and faster distributions of floriculture products. These factors are also boosting market growth across the globe (Floriculture Market-Global Industry Analysis..., 2022).

Data Bridge Market Research estimates that the floriculture market will project a compound annual growth rate (CAGR) of 8.60% during the forecast period of 2021-2028. Growth and expansion of e-commerce industry, especially in the developing economies, rising inclination of population towards gardening, rising advancements in the biotechnology industry, are the major factors attributable to the growth of floriculture market. This means that the floriculture market value, which was USD 3.65 billion in 2020 will climb up to USD 7.062 billion by the year 2028 (Global Floriculture Market..., 2021).

So, increasing use of mobile phones, computers, and laptops has helped in the growth of digital channels with respect to strength and volume.

The floriculture market is estimated to grow at a CAGR of 8.6% between 2022 and 2027. The size of the market is forecast to increase by USD 44.88 billion. The growth of the market depends on several factors, including high profits associated with growing ornamental plants, the use of flowers and plants for decorative/aesthetic purposes, and growing prominence for online shopping (Floriculture Market by Product..., 2023).

The production of flower products is a traditional activity for Ukraine and all its regions without exception, and there are all the necessary conditions for this.

The market of ornamental plants in Ukraine is characterized by the fact that, in addition to technology, one of the important factors for the positive result of growing ornamental plants is the assortment of

products, and the majority of domestic enterprises in the cultivation of ornamental plants do not have a clear specialization, and the list of varieties and forms of plants grown by them consists of 100-200 items.

The next factor that had a significant impact on the results of the nurseries of decorative crops before the military invasion of Russia was the sale of products.

After all, in Ukraine, a multi-channel system of selling ornamental plants has developed, which involved modern garden centers, supermarkets, a small number of branded stores, specialized small shops, but there is also street trade, which accounts for up to 50% of the sale of cut flowers. Garden centers focused on the sale of trees and shrubs in the open ground (up to 80% of total sales in the retail chain) and potted plants (may reach 50%), while specialty stores sold cut flowers and, to a small extent, potted plants. The share of sales in supermarkets was extremely low, about 5% of all sales in the retail network, and is not of significant importance (Analysis of the market..., 2021).

Currently, the flower market is gradually trying to resume its work, but in wartime conditions, it is difficult to show better results than before the war.

Since flowers belong to agricultural crops, the organization of the production process generally has the same features as the cultivation of other crops in the field of crop production, however, during the cultivation and production of products, production costs arise: labour costs, seeds and planting material, fuel and lubricants, fertilizers, plant protection products, works and services, fixed asset repair costs, other fixed assets maintenance costs, other costs and general production costs.

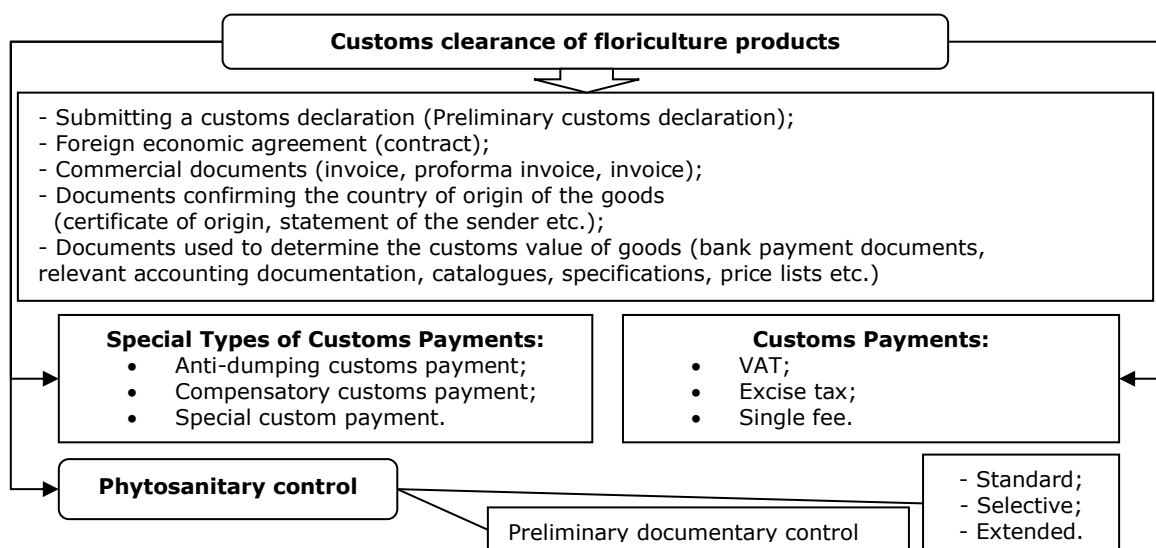
It is also worth mentioning the main problems that representatives of nurseries face in their work, which are listed below.

- Lack of personnel required for the work of the nursery. The reason is that many employees of various levels go to other countries, in particular to Poland, where salaries are higher. In addition, agricultural universities do not train agronomists for the cultivation of ornamental plants, the focus is more on agricultural crops.
- The problem of sale of grown products. It is difficult to predict the assortment of plants according to the tastes of the customers, because there are no marketing specialists who can predict the changes in demand for certain categories of plants, so often the plants are not sold according to the plan.
- Lack of developed infrastructure, which would allow quick and easy access to all consumables needed for growing plants, for example, it is difficult to find fertilizers, containers etc.
- Difficulties associated with updating the fleet of machinery necessary for nursery maintenance: lack of funds for the purchase of machinery, inflated prices including customs clearance, unfavorable conditions for renting machinery or lack of service for nurseries, lack of assistance from the state.
- The import dependence of nurseries, which, in combination with high prices for imported products and the cost of customs clearance, makes the production of ornamental plants less profitable.
- Potential risks when selling plants grown in nurseries, as most of the crops grown there are not included in the State Register of plant varieties suitable for distribution in Ukraine (Ministry of Agrarian Policy..., 2020).
- Impossibility of registering the land on which the nursery is located as private property, unsettled land market (land market problem). This deprives nurseries of guarantees of return on investment, endangers their existence in the future, and makes investment in nurseries risky.
- Lack of loans with low interest, banks currently have no offers for nurseries that would take into account their capabilities and an important feature in their work - seasonality of profits.

- The problem of maintenance of specialized equipment: service centers are either difficult to access or do not exist at all. Manufacturers and distributors of equipment are not interested in organizing the service, since the number of nurseries is not large; accordingly, there are not many potential customers. If there are problems with the equipment, nurseries are forced to call specialists from abroad, which is very expensive.
- Bureaucracy and time needed to collect the necessary documentation. It is difficult for Ukrainian business representatives, but it is especially difficult for foreigners, because they are used to the fact that bureaucratic issues are resolved much faster in other countries.
- Difficulties that arise when crossing the border, especially during customs clearance. Among the difficulties, some representatives of nurseries called the long time for which the products are delayed at customs, difficulties with processing documents as a reason for demanding bribes.
- Difficulties associated with climate and weather conditions that can cause plant losses. For example, the long and cold winter of 2018 caused significant plant losses in most nurseries, leading to losses (Market of flowers..., 2019).

Globalization processes have resulted in further challenges in the area of accounting and control. Particularly, a number of discrepancies in accounting regulations in different countries have emerged causing difficulties in communication processes between companies and investors in international agricultural business (Gutsalenko, 2018).

The order of customs procedures, in particular customs clearance, customs taxation and customs control, deserves special attention. Let's dwell on these procedures (Figure 6).



Source: formed by the authors based on conducted research

Fig. 6. Peculiarities of customs procedures for crossing the border of Ukraine for floriculture products

The import of goods to Ukraine requires the proper fulfilment of the conditions of the customs clearance procedure provided for by the Customs Code of Ukraine. Customs clearance begins from the moment the declarant submits the customs declaration to the revenue and duties authority. The declaration contains accurate information about the goods, the purpose of their movement across the customs border of Ukraine, as well as information necessary for their customs control and customs clearance. To simplify the customs clearance procedure, the declarant can also submit a Preliminary Customs Declaration, which simplifies the release of goods to the territory of Ukraine.

Foreign economic activity (FEA) related to import is carried out according to the Ukrainian classification of goods of foreign economic activity (UKTZED), which is compiled on the basis of the Harmonized system of description and coding of goods (international nomenclature of goods developed by the World Customs Organization).

Decorative plants according to UKTZED fall under group 06 "Live trees and other plants; bulbs, roots and other similar parts of plants; cut flowers and decorative greenery".

In addition to paying state duty, goods imported into the customs territory of Ukraine are subject to VAT.

The next stage of customs clearance for the import of goods to Ukraine is customs control, which includes phytosanitary control, preliminary documentary control, standard phytosanitary control, selective phytosanitary control, extended phytosanitary control.

According to Art. 36 of the Law of Ukraine "On Plant Quarantine" (Law of Ukraine on Plant Quarantine. (2022)) imported and transit cargo with regulated objects must meet the following requirements: be free of quarantine organisms; be accompanied by original phytosanitary certificates; not originate from the facility or production area or move through the quarantine zone, as confirmed by the foreign national plant protection organization of the exporting or transit country.

The phytosanitary certificate is issued by the relevant authorized body of the exporting country and certifies the compliance of the cargo with the phytosanitary requirements of Ukraine.

State phytosanitary inspectors at designated plant quarantine points at checkpoints on the state border of Ukraine carry out Phytosanitary control of cargo with regulated objects imported into the customs territory of Ukraine (including for the purpose of transit).

Customs authorities carry out preliminary documentary control. Seeds, planting material, flowers, and decorative plants are not subject to prior control in the presence of certificates that they have not been treated with pesticides and other chemical substances.

Standard phytosanitary border control is carried out by state phytosanitary inspectors by means of inspections to establish that: the object of regulation is accompanied by a valid phytosanitary certificate, if it is required according to the current phytosanitary measures; objects of regulation correspond to the documents that accompany it; there are no quarantine organisms and no signs of damage to the cargo.

Selective phytosanitary control is carried out by the State Production and Consumer Service, which establishes a specially determined percentage of cargo that is subject to mandatory extended phytosanitary control based on data on the detection of quarantine organisms in cargo with regulated objects of any origin that are imported, as well as on the basis of other factors, which may affect the life and health of plants, taking into account the results of the risk analysis (Market of flowers..., 2019).

The Ukrainian flower business can be considered a new industry, but promising, with great potential. Recently, there has been a trend towards an increase in the number of private entrepreneurs and large companies at the international level, which produce high-quality products in sufficient quantities to supply the domestic market.

However, taking into account the new realities of today (COVID-19, war with the Russian Federation etc.), Ukrainian flower growers have to adapt to new difficulties and new demands of consumers and fashion in order to keep the market.

Regarding imported products, Ukrainian floriculture should conduct direct purchases from auctions or via the Internet (electronic sales) to reduce intermediaries.

Conclusions, proposals, recommendations

- 1) The presence of demand for flower products on the world market and the Ukrainian market from the consumer's side has a growing tendency and demonstrates the modern development of the flower industry.
- 2) The flower industry (cut flowers) needs prompt customs clearance and customs procedures, as it is limited in terms of product sales and quickly loses its marketability.
- 3) Ensuring the profitability of the floristic business, especially in conditions of risks, requires the expansion of marketing activities with the formation and expansion of logistics routes provided by IT technologies.

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