

Plant growing of ornamental crops in Ukraine: factors of development and risk

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The purpose. Monitoring of market of ornamental plants of Ukraine, analysis of factors of influence and determination of optimum ways of its further development. **Methods.** Historical-scientific, problem-chronological, logical, materials of statistical observation and state catalogue of cultivated plants were used and analyzed. **Results.** Analysis of assortment of ornamental plants of domestic production was carried out, and its conformity to necessities of state-of-the-art market was specified. It is shown that the catalogue of the plants allowed for spread in Ukraine includes restrained number of floral crops stated by 2 scientific institutes. Market organization of implementation of ornamental plants is specified, offers on its optimization are worked out. Most acute problem in this aspect is regulation of spontaneous market of trade by flowers. Analysis is carried out of current prices of ornamental plants in the market of Ukraine and abroad, and limits are set of their further increase in the state. It is shown that price on some groups of crops has reached the level usual for foreign ones. Results of economic activities of sectors of production and implementation of ornamental plants, in particular balance of export and import, wholesale and retail, market capacity are analyzed. Restoration of export of ornamental plants produced in Ukraine, decrease in expenditure on their import, installation of parity between domestic and imported products in the market and some increase of its capacity is registered. **Conclusions.** Positive factors of development of plant growing of ornamental plants in Ukraine — change of pattern of ownership, structurization of production, use of state-of-the-art techniques, restoration of export, trend to increase of production volumes are fixed. Negative factors are as follows: negative balance of export and import, restrained geography of trade, great volumes of spontaneous trade, insufficient consumer ability of population.

Key words: *floral plants, ornamental bushes and trees, production, assortment, implementation, price, export, import.*

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Introduction (problem statement). Production of ornamental plants is currently a very powerful economic lever in many countries of the world: in 2012, the total financial result of this sector of agriculture amounted to 47.5 billion euros [1], with the value of flowers and potted plants products at 32 billion; the most powerful market participants were EU countries – about 11 billion euros, also China – 5.1, the United States – 4.4, Japan – 2.5 billion and others [2]. The leader among European countries are the Netherlands – with an area of land under the production of ornamental crops 43.7 thousand hectares (21% of the total in Europe) and the financial result only from the sale of ornamental bulbs more than 600 million € [3]. In 2014, EU countries exported ornamental plants on 1.9 billion euros, while at the same time imported on 1.59 billion €. According to available information [4], the one German citizen spends annually on cut flowers 51 € and potted plants – 35 €, respectively in the Netherlands these costs are 34 and 56 €, in France 20 and 31 €, in Poland 4 and 10 €.

In this context Ukraine looks much weaker: for example, in 2017 we have grown the main export commodity – cut roses – about 70.1 million pieces, or less than 2 flowers per one Ukrainian; in export, we are in 75th place in the world with a share of 0.02% of the total sale of ornamental plants [5], and the annual expenditures of one inhabitant of the country for cut flowers and potted crops are respectively 3 and 4 € [4]. According to Kosenko [6], in 2017, the total land area under ornamental plants in Ukraine was about 3 thousand hectares, although the number of nurseries reached 560: 320 of them private; also, the average area of one nursery was only about 5 hectares. This situation is quite logical, because in the last 20 years, domestic ornamental plant cultivation has undergone a difficult transformation from post-

Soviet communal "green buildings" to modern, in most private farms, which have adopted modern European technologies and most often - varieties of plants [7] and withstood two economic crises in 2008-2009 and 2014-2015 years [8]. An important factor in the stability of enterprises in these and subsequent years was also learned from Western neighbors experience in marketing strategy [9]. The result of these processes is a completely changed sector of agricultural production, which in recent years has shown some positive changes [10]. Further confident development of this sector requires both continuous monitoring and analysis of the factors that most influence this process, with further creation of the development strategy. This is precisely what was chosen in this paper for the **purpose of research**.

Materials and methods. Historical-scientific, logical, problem-chronological research methods are applied in the work, materials of official statistical observations, state register of plants, suitable for distribution in Ukraine, information from the sites of leading companies for growing ornamental plants are used and analyzed.

Research results. One of the important factors behind the positive result of growing ornamental plants is the product assortment together with technology. Our monitoring data showed that most domestic enterprises do not have a clear specialization in the cultivation of ornamental plants, the list of varieties and forms of growing plants include 100-200 names and mainly they come from abroad.

The lack of interest of our producers in the results of the scientific development of botanical gardens, institutes and universities of Ukraine has a logical explanation - it is enough to refer to the data of Table 1, which indicate that at this moment the State Register of plant varieties, suitable for distribution in Ukraine, contains only 227 varieties from 15 species of ornamental plants, of which 183 are flowering herbs and 44 are flowering shrubs. The lawn herbs are completely absent in State Register, as well as forms of ornamental coniferous and deciduous shrubs etc. Two more important features are the dominance in the Register only two applicant scientific institutions and the non-systematic presence of foreign firms at the level of 8%. Therefore, a significant change in this negative situation requires, first and foremost, a significant strengthening of the scientific staff involved in the problem of the selection of ornamental plants.

Another factor that significantly affects the results of the activities of nurseries of ornamental crops is the sale of products. It should be noted that we currently have a multi-channel system for the sale of ornamental plants, which include modern garden centers, supermarkets, firm markets, little special markets, but there is also street trading, which accounts for up to 50% of cut flower sales. Garden centers focus on selling trees and shrubs in open ground (up to 80% of total retail sales) and potted plants (about 50%), while specialist stores – on cut flowers and in a small volume – potted plants. The share of sales in supermarkets is very low, about 5% of all sales in the retail network, and is not significant. In addition, the common practice of domestic nurseries is the sale of finished products "from the field" – in containers or with soil, as a result, a significant and undetermined part of production to the trading network is not received. So, the system of sale of ornamental plants in Ukraine, although developed as a modern one, but requires significant adjustment: expansion of branded shops, strengthening of direct communication between production and garden centers, regulation of spontaneous trade.

1. Ornamental plants, included in State Register of varieties, suitable for distribution in Ukraine

Groups and species of plants	Number of varieties in the register	Applicants
Flowering Shrub:		
<i>Rhododendron</i>	15	NBG*
<i>Lilac</i>	4	NBG
<i>Garden Rose</i>	24	NBG,
<i>Total 5 species</i>	44	Netherlands, Italy, Germany
Herbaceous flower:		NBG
<i>Dahlia</i>	23	NBG, IH*
<i>Kallistefus</i>	27	NBG
<i>Peony</i>	42	NBG
<i>Chrysanthemum</i>	45	NBG, IH
<i>Day Lily</i>	10	NBG, IH
<i>Gladiolus</i>	15	
<i>Total 10 species</i>	183	

*NBG-National Botanical Garden, IH- Institute of Horticulture, Kyiv

An important factor characterizing trends in the development of ornamental crops is the price of products. Table 2 provides data on the dynamics of this indicator in 2017-2019 for some specific crops.

2. Average prices of nurseries of ornamental crops for products, UAH (1€-30 UAH)

Ornamental culture	Open ground				Containers 2-3 L			
	2017	2018	2019	Hungary	2017	2018	2019	Hungary
<i>Common maple</i>	230	470	490	1100	410	210	420	95
<i>Spruce</i>	200	260	620	820	110	240	220	200
<i>Arborvitae</i>	220	440	420	140	110	105	175	90
<i>Common juniper</i>	340	310	380	440	110	145	155	140
<i>Lilac</i>	260	300	500	300	115	225	150	90
<i>Hosta</i>	32	43	90		55	90	65	115

In recent years, domestic nurseries have significantly increased the prices of most grown plants, sometimes 2-3 times in the case of open ground production. But the main tendency is the price for products in containers: domestic prices have even exceeded the foreign prices, compared to neighboring Hungary, and only for products in open ground for several cultures does our producer still have a reserve. It can be concluded that further increase in prices for domestic products is impractical, since in the open market it can be replaced by cheaper imported ones. Therefore, our manufacturer should look for other ways to improve the financial condition, by reducing the cost, the release of a new range and more.

Another noteworthy factor in the development of ornamental plant growing is the distribution of product sales by region (Table 3). The undisputed leader in the sale of ornamental plants in Ukraine is Kyiv and the region, about a third of the total. This is natural, as both a large group of nurseries and greater financial resources are concentrated here. Regions with centers about one million population are far behind the capital: Donetsk (of course), Kharkiv and Dnipro. In this aspect as a positive is a result by Lviv and Odesa regions, as well as Sumy, Vynytza, Ivano-Frankivsk and Zaporizhzhia.

3. Sales of flower products by regions of Ukraine, % of total

Region	2013	2016	2018
<i>Kyiv</i>	27	34	37
<i>Odesa</i>	10	6	9
<i>Dnipro</i>	8	8	7
<i>Kharkiv</i>	10	6	5
<i>Donetsk</i>	13	5	3
<i>Lviv</i>	13	6	6
<i>Others</i>	19	35	37*

*in particular Sumy- 5%, Vynitsya, Zaporizhzhya. Ivano-Frankivsk -3%

In the geographical sense it can be stated that the marketing policy of domestic firms is imperfect, and this is especially true of areas with large populations.

An indispensable factor characterizing trends in the agricultural sector is the evaluation of exports and imports of products. For ornamental it is significant, that exports have resumed since 2016, albeit in small sizes, since the previous crisis (Table 4).

3. Ukraine's exports of ornamental plants

Products	Cost, thousands \$		
	2016	2017	2018
<i>Rose shrubs</i>	28,5	57,4	79,9
<i>Cut roses</i>	1167,0	864,3	834,4
<i>Woody ornamentals</i>	2085,0	2485,4	2228,1

The main export item is a cut roses, which for three years was shipped to Belarus and Poland, as well as woody ornamental plants imported to the UNC countries. There is no definite tendency for export growth so far, rather it is possible to speak about the consolidation of Ukraine among the exporters of ornamental plants. At the same time, the limited export geography is a negative factor. Further comparison of exports and imports of products by Ukraine indicates a significant negative balance in favor of imports: only flowering plants imported to us for 10.6-12.2 million \$ with a tendency to growth; up to 60% of imports are cut flowers and half of them are roses. Against this background, the export of Ukraine from the cut of roses looks amazing. A possible explanation for this is that the wholesale price of a cut roses imported to us from Ecuador and Colombia has decreased in recent years from 4.2 to 1.7 UAH per unit – with it domestic production simply cannot compete.

In general, the performance of flowering plants can be estimated using the data in Table 5.

4. Financial results of sale of flowering plants.

Financial indicator	Result, millions UAH		
	2016	2017	2018
<i>Wholesale, total</i>	732,0	691,3	763,3
<i>Wholesale to the end consumer</i>	201,6	177,7	0
<i>Retail sale</i>	530,4	513,6	772,1
<i>Sale of domestic production</i>	271,3	255,2	388,6
<i>Total domestic production</i>	474,4	432,9	512,6
<i>Export</i>	85,8	88,6	82,7
<i>Production balances at year end</i>	116,4	89,1	130,4
<i>Total volume of the flower market</i>	898,6	883,9	917,2

It can be seen, that the total market volume of the flowering plant has stabilized in recent years at around UAH 900 million, with slight rising in 2018 because growth of domestic production and retail sales of flowers. But it is too early to talk about a steady tendency to revive the production and sale of these products. Unfortunately, such analysis on the production and sale of woody ornamental plants is

impossible, since in Ukraine there is still no separate statistics for this group of goods. The only information on this subject was contained in a speech by A. Zachynsky [11] at the All-Ukrainian Forum of planting material of ornamental plants -according to his data, the volume of sales of woody ornamental plants in open soil by enterprises producing the country in 2012 was 280, and in 2014 - about UAH 180 million.

Conclusions

The development of modern ornamental plants in Ukraine is conditioned by a number of factors of positive and negative content. The first include: changing the ownership of farms, structuring production and moving to modern technologies, reducing production costs, resuming exports, stabilizing after two crises, and some reviving production and sales. At the same time, as a negative are the widespread use of the growing technology of imported seedlings, the lack of specialization of production, the limited assortment of products, insufficient supply from scientific institutions. In the product market, the negative are the negative balance of exports and imports, the limited geography of operations, the need for further optimization of the trading system and the restriction of the spontaneous market. Another important factor is the lack of purchasing power of the population.

References

1. Celik, Y., & Arisoy, H. (2013). Comparative analysis of outdoor ornamental plants sector: a case study of Konya province, Turkey. *J. Horticulture Res.*, 21(2), 5-16.
2. Vanderlest, D., Zolichova, L., & Lariviere, V. (2016). Life plants and production of floriculture sector in the EU. In *Eurocomissie DG. Agriculture and rural development. Unit C2*. Brussels.
3. Volckaert, E., & Gobin, B. (2014). Ornamental plants and floriculture. In *Soils, Plant crow and Crop production. Encyclopedia of Life support system (EOLLSS). UNESCO-EOLSS sample chapters/C10/E1-05A-51 pdf*.
4. Butko, M. P., & Solomakha, I. V. (2017). *Stanovlennia vitchyznianoho rynku florystychnoi produktsii v umovakh yevrointehratsii* [Formation of the domestic market of floristic products in the conditions of European integration]. Chernihiv: ChNTU. [In Ukrainian].
5. Kleefmangroup. (2019). *Rynok kvitiv ta dekoratyvnykh roslyn v Ukraini. Skorochenyi zvit Posolstvu Niderlandiv v Ukraini* [Market of flowers and ornamental plants in Ukraine. Short report to the Embassy of the Netherlands in Ukraine].
6. Kosenko, Yu. I. (2017). Suchasnyi stan dekoratyvnoho rozsadnytstva Ukrainy ta perspektyvy yoho rozvytku [The current state of ornamental planting in Ukraine and prospects for its development]. In *Naukovyi visnyk NUBiP, seriia Lisivnytstvo ta dekoratyvne sadivnytstvo* [NULES Scientific Bulletin, Series Forestry and Ornamental Horticulture]. (Vol. 266, pp. 170-177). [In Ukrainian].
7. Yezhov, V. M., Rudnyk-Ivashchenko, O. I., & Shevel, L. O. (2014). Dekoratyvne roslynnytstvo v Ukraini: perspektyvy strukturyzatsii ta staloho rozvytku [Ornamental plant growing in Ukraine: prospects for structuring and sustainable development]. *Bulletin of Agricultural Science*, 11, 16-21. [In Ukrainian].
8. Yezhov, V. M., & Lytovchenko, O. P. (2016). Rynok dekoratyvnykh roslyn Ukrainy v umovakh suchasnoi ekonomichnoi kryzy [Market of ornamental plants of Ukraine in the current economic crisis]. *Bulletin of Agricultural Science*, 12, 20-24. [In Ukrainian].
9. Cherniaieva, A. N. (2011). Metodychni pidkhody do formuvannia marketynhovykh proqram prosuvannia kvitkovoii produktsii [Methodical approaches to the formation of marketing programs for the promotion of flower products]. *Bulletin of Khmelnytsky National University*, 10, 15-18. [In Ukrainian].
10. Ezhov, V. M., Pishchenko, O. V., & Lytovchenko, O. P. (2017). Tekhnolohichni ta ekonomichni chynnyky zrostannia vitchyznianoho vyrobnytstva dekoratyvnykh kultur [Technological and economic factors of domestic ornamental plants production growth]. *Bulletin of Agricultural Science*, 10, 15-18. [In Ukrainian].
11. Zachynskyi, A. (29.12.2014). *Rynok dekoratyvnoho rozsadnytstva Ukrainy v naiblyzhchi 3-5 rokiv* [Ukraine's market of ornamental seedlings in the next 3-5 years]. Forum All-Ukrainian Association of Decorative Manufacturers plants. Kyiv, Pushcha-Vodytsia, 5-6.12.2014. [In Ukrainian].