

## ECONOMIC JUSTIFICATION FOR FLORICULTURE DEVELOPMENT IN SERBIA

*Durđica Đ. Vukajlović<sup>1</sup>, Hugo van Veghel<sup>2</sup>, Slobodan Đ. Đurović<sup>3</sup>*

### Summary

*Floriculture is a part of horticulture, an agricultural activity which has been on the rise during the past decades. It is different from traditional culture, not only due to the increased sales revenues, but also because flowers are ever more present in daily life, which has created opportunities for engaging in floriculture as a legitimate source of income. The aim of the paper is to present the current situation in the area of floriculture in the world and in Serbia, as well as to draw attention to the relationship between the import and export of floriculture products. This paper includes a SWOT analysis that provides an overview of the current state of floriculture in Serbia and the opportunities for its development. Floriculture is not widespread in Serbia, even though there are quite advantageous climatic conditions, fertile land, tradition and experience, but not enough innovation, inadequate equipment, technological lagging behind in production and insufficient harmonization with EU standards.*

**Key words:** *floriculture, ornamental plants, import, export, production*

**JEL:** *Q17, Q13*

### Introduction

Horticulture is the practice of plant growing in a relatively intensive manner, where people are engaged in the production process to a larger extent, contrary to agriculture which is largely based on the use of machinery in most of the countries in Western Europe. The basic principles of plant growing in the area of horticulture are based on (Adams, Bamford, Early, 2008): outdoor production, protected cropping, flower production

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and garden construction, interior landscaping, turf culture, professional gardening and garden centres which sell plants and all gardening products. The horticulture industry is underdeveloped, so more needs to be done to promote it in relation to the plentiful economic, environmental and social benefits it provides to society. Horticulture can be defined as the science and art of growing fruits, vegetables, flowers and ornamental plants (Jaffee, 1995). A more general definition should, in addition to production and product (vegetables, fruits, ornamental plants) marketing, include relatively high values per product unit, high perishability with intensive utilization of land, labour knowledge, financial resources and other inputs, mainly in the production for a selected export market.

Many of the advantages of horticulture are not sufficiently recognized, so for most people flowers and other plants are only a part of their subconscious, something that is in the background and that has no significant role in everyday life. The horticulture industry is extremely complex and dynamic, and it represents a vital segment in the economies of a large number of countries and the global economy. As the countries all over the world become more urbanised, so will the importance of horticulture rise, because economic development results in people expecting a higher quality of life. On the other hand, horticulture is but one of many industries competing for scarce resources (land, water, energy, etc.), hence the utilization of those resources is evaluated in terms of its benefits and costs (Hall, Hodges, 2011).

Numerous studies have dealt with the economics of different aspects of floriculture (Khonphan, Pansila, Ritthidet, 2009; Adeniyi, 2015; Hussain, Khan, Jehanzeb, 2016) and they discussed the opportunities for the development of this economic area in a way that would enable the people engaged in this activity to make a good living for themselves. Floriculture is the latest addition to the commercial economic sector of agriculture and it is being developed in all of its potentials. Generally, the business of growing traditional flowers (typical for certain countries), as well as untraditional flowers and dried flowers is referred to as the floriculture industry, which encompasses the production, processing and marketing of all types of flowers (Kadam, 2012). In the context of floriculture, as a branch of agriculture, its difference from traditional husbandry is emphasized, not only due to the increased sales revenue, but because flowers are evermore present in daily life, which leads to opportunities for having floriculture as a source of income (Petar, 2008). Floriculture serves the purpose of raising income and reducing poverty in the developing countries. In certain labour-intensive economies which are not developed, the production of cut flowers is the main source of their comparative advantages (Labaste, 2005). That is further supported by the fact that the demand for flowers is increasing, both in the developed and in the developing countries, so the growing of different types of flowers has the capacity to enhance economic benefits, which include different aspects of floriculture, from production and sales to marketing (Manzoor et al, 2001). In order to develop the efficiency of the floriculture sector, the efficiency of the growers has to be enhanced, and to overcome the challenges they are facing, good management practices are necessary. Sustaining a

successful business requires the production of high quality goods, which is the task of the growers, but the quality has to be distributed and the growers must take production costs into account in order to ensure the return of their investment, time and money. Flowers are viewed as a luxury product with high social value (Getu, 2009). The demand for these luxury products on the international market has increased during the past years. Most developing countries which have geographic advantages have included this activity as an opportunity to achieve faster economic growth (Frank, Cruz, 2001).

The ornamental plant industry has the potential to generate employment in urban and rural areas, directly or indirectly. That includes skilled employment categories such as nursery management, individual work on the growing and selling of plants. However, if the floriculture industry is compared with horticulture products, it can be concluded that the development of floriculture requires more investment, more growing technology and better management (Xia et al, 2006).

The production of floriculture is increasing by the average annual rate of 10 per cent, and approximately 50 countries are at present actively involved in the production of floriculture to a large extent. In addition to production, there has been an increase in the consumption of floriculture products in the developed and the developing countries (Hanafi, 2012). That lead to enhanced efforts at the world floriculture market causing the overall revenue to increase at the annual rate of 10 to 15 per cent (revenue is measured in billions of dollars).

Europe has traditionally been the largest exporter of floriculture in the world. The Netherlands, Italy, Germany, Spain, Great Britain and France are the main centres of production, while significant growth in production has recently been recorded in Poland (Van Huylenbroeck, 2010). Consumers purchase floriculture due to tradition, culture and their way of life. They demand products that are consistent in terms of quality, price and added value or that are priced lower. This dynamic industry continuously demands different types of products; it requires the knowledge of product origin and production techniques, and asks for different arrangements, which stresses the adaptability of all actors involved in this activity.

### **State of floriculture in the European Union**

The world flower trade is characterised by a high level of concentration of products and their sources. Roses are the chief trading product, with Germany being the main import market and the Netherlands the world's leading exporter, as a country with highly developed and intensive agriculture in which the traditional sector of floriculture is of high importance. The reason why the Netherlands is the largest exporter of flowers in the world lies primarily in the fact that this country has the most efficient and the most innovative producers, in addition to having an efficient distribution system which is supported by good road and air networks.

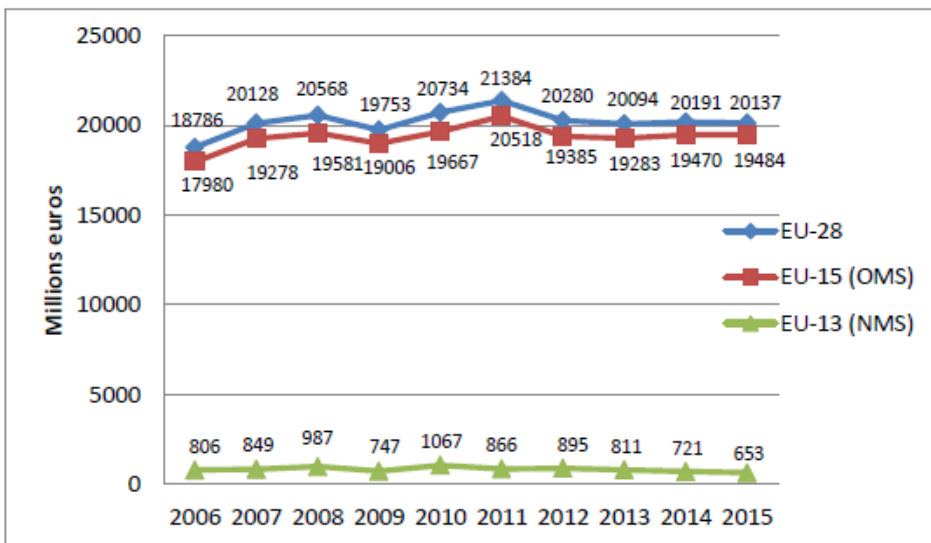
A concern present in the production of floriculture is the issue of environmental protection (Simeunović, 2016), since the consumers have become apprehensive of the

use of chemicals because plant preservation chemicals and fertilizers are intensively used in floriculture. In order to keep the production trends at the same level, or even to increase them, steps have been made to lower the use of chemicals, and in 2009 the Netherlands banned from use a number of pesticides in order to protect the environment. That helped the flower industry to improve its image and keep the growth trend going.

At the retail level, flowers are sold at a variety of places, including traditional flower shops, garden centres, supermarkets and street markets. The ways and the share of sales vary from country to country, although the share of supermarket sales is generally speaking on the rise.

The data on the production of flowers and ornamental plants in the EU has been provided in Graph 1. Countries were divided into the old members of the EU (Old Member State - OMS) and the new members who have accessed the EU since 2004 (New Member State - NMS). The graph shows that the production in the old member states is high above the production of the new member states and that there is a large discrepancy in production values between these two categories of states.

**Graph 1.** Production of flowers and ornamental plants in the EU (expressed in producer prices)



Source: European Commission (2016): Flowers and ornamental plants – Horticultural products, Statistics 2006-2015, Working document.

Table 1 provides the values of production per EU country, as well as the share percentages. It can be noted that the Netherlands, Italy, Germany, France and Spain have a joint share of 79.7% of the total value of flower and ornamental plant production. Moreover, it is apparent that there are a large number of countries (mainly the ones which joined the EU later) whose share is less than 1% which affirms the view that floriculture is a significant segment in the agricultural production of only a small number of countries.

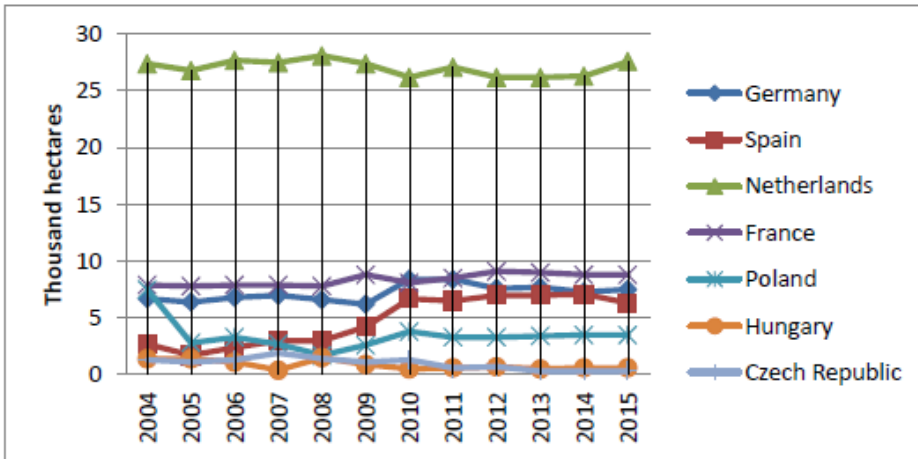
**Table 1.** Value of the production of flowers and ornamental plants per EU country

States	Old/New member state	Prices in millions euro's	Share in 2015
Netherlands	OMS	5 376	28.5%
Italy	OMS	2 533	13.4%
Germany	OMS	2 756	14.6%
France	OMS	2 456	13.0%
Spain	OMS	1 932	10.2%
United Kingdom	OMS	968	5.1%
Belgium	OMS	773	4.1%
Portugal	OMS	400	2.1%
Denmark	OMS	402	2.1%
Austria	OMS	261	1.4%
Sweden	OMS	249	1.3%
Romania	NMS	92	0.5%
Greece	OMS	105	0.6%
Hungary	NMS	143	0.8%
Finland	OMS	103	0.5%
Czech Republic	NMS	59	0.3%
Poland	NMS	75	0.4%
Slovenia	NMS	27	0.1%
Cyprus	NMS	9	0.0%
Lithuania	NMS	14	0.1%
Slovakia	NMS	12	0.1%
Latvia	NMS	4	0.0%
Estonia	NMS	2	0.0%
Luxembourg	OMS	4	0.0%
Bulgaria	NMS	21	0.1%
Malta	NMS	0	0.0%
Croatia	NMS	93	0.5%
Ireland	OMS	-	-
<b>UE-28</b>		<b>18 867</b>	<b>100.0%</b>
<b>UE-15 (OMS)</b>		<b>18 316</b>	<b>97.1%</b>
<b>UE-13 (NMS)</b>		<b>550</b>	<b>2.9%</b>

Source: European Commission (2016): Flowers and ornamental plants – Horticultural products, Statistics 2006-2015, Working document.

Graph 2 provides an overview of the use of land for the production of flowers and ornamental plants in the EU countries. It can be seen that the Netherlands had between 25,000 and 30,000 hectares of land under flowers and ornamental plants during the observed period, while no other observed country's land use exceeded 10,000 hectares. On that basis, we can conclude that the Netherlands is the dominant leader in the European Union when it comes to the land area used for floriculture products as well.

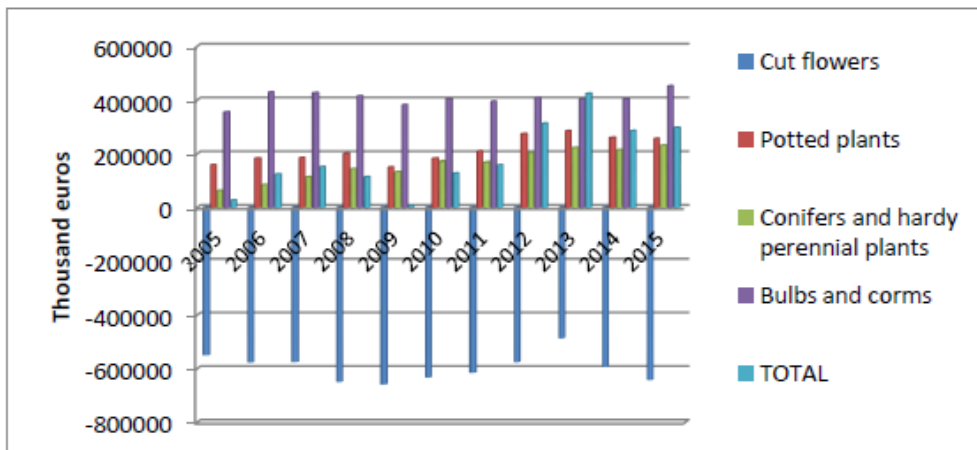
**Graph 2.** Land use for flowers and ornamental plants in the European Union countries



Source: European Commission (2016): Flowers and ornamental plants – Horticultural products, Statistics 2006-2015, Working document.

Graph 3 provides an analysis of trade in the four main categories of floriculture products: cut flowers (roses, carnations, orchids, gladiolas, chrysanthemums, etc.), potted plants, conifers and perennial plants, and bulbs and corms. The results indicate that the trade balance is overall positive, while being extremely negative for cut flowers. The most positive trade exchange balance is for bulbs and corms in all observed periods, except in 2013. It is apparent that the EU has a positive trade balance and that the trade of flowers and ornamental plants is a lucrative business.

**Graph 4.** Trade balance of floriculture products in the European Union (in thousands of EUR, Import-Export)



Source: European Commission (2016): Flowers and ornamental plants – Horticultural products, Statistics 2006-2015, Working document.

## Floriculture in Serbia

Serbia is distinguished by its plentiful land resources and a favourable climate, so agriculture represents a vital sector in the Serbian economy. Two thirds of the population in rural areas are engaged in agriculture. A plethora of favourable natural conditions result in quite diversified agricultural production.

The total area of Serbia amounts to 5,051,000 hectares, with arable land constituting 3,295,000 hectares. Agricultural land takes up approximately 70% of the total area of Serbia, while 30% is under forests. 65.2% of the total agricultural area is covered by ploughlands and gardens, while pastures cover 16.5%, meadows 12.4%, orchards and vineyards 4.8%, and 1.1% is classified as other. In terms of the ownership structure, private producers have a share of 49.70% in the production of ornamental plants. Public enterprises that produce forest tree planting materials as a part of some nurseries' product lines also offer woody ornamentals. Public utility companies which take care of green spaces produce planting materials for seasonal flowers, perennials and woody plants for their own needs or to be sold on the local market (Glavendekić, 2013).

The data provided by the Statistical Office of the Republic of Serbia does not take floriculture into account. The closest to it is the data on nurseries as places where useful plants are grown. Even though the data on floriculture is not taken into account, the land area of flowers is listed, which is provided in Table 2. It can be seen that flowers do not even cover one per cent of the total land, but there was an increase in the land area of flowers in 2015.

**Table 2.** Land area of flowers in the Republic of Serbia

YEAR	TOTAL LAND AREA in ha	TOTAL LAND AREA OF FLOWERS in ha
2013	3,406,320	412
2014	3,506,830	343
2015	3,468,519	445

*Source:* Annual Statistical Bulletin (2016), Statistical Office of the Republic of Serbia, Belgrade.

According to the data of the Statistical Office, Serbia imports floriculture products mainly from the Netherlands and Italy, while it exports to Russia, Ukraine, Macedonia and Montenegro. Table 3 provides the flower import and export figures in Serbia for the period 2009-2013. The average export of flowers during this period amounted to 10,423 tons, with the average value of 9.8 million euros, while 7.532 tons of flowers were imported on average, with 12.1 million euros being the average value. If the chain index of the export trends is observed, it can be seen that there was an increase between 2009 and 2010 in the amount exported by 1.02%, but the value decreased by 16.65%. In 2011 the amount exported was lower than in 2010, but the value increased by 22.42%. In 2012 the amount exported was higher by 15.06% than in 2011, but the value was lower by 16.05%, while the amount exported in 2013 was higher by as much as 148.52%, while the value increase was not as high as it was only 31.99% greater.

If we take a look at the import figures, we can see that the quantity increased in 2010 compared to 2009 by 8.9%, while the increase in value was at 1.31%. Import decreased in 2011 compared to 2010 by 28.45%, and the value decreased as well by 17.46%. The amount imported in 2012 decreased by 1.64% compared to 2011, but the value increased by 11.94%, while the amount imported in 2013 decreased by 0.66% compared to 2012 while the value increased by 2.39%.

By observing the discrepancies between imports and exports, we can see that export was lower than import in 2009 in terms of amounts and values, and the same is true of 2010 as well. In 2011, 2012 and 2013 there was a positive balance of imports and exports in terms of amounts, but not in terms of values, so it can be concluded that imports are still greater in value, as observed in the aforementioned period.

**Table 3.** Flower import and export trends observed in amounts and values

	EXPORT		IMPORT		Amount EXPORT-IMPORT	Value EXPORT-IMPORT
	Amount (kg)	Value (Eur)	Amount (kg)	Value (Eur)		
<b>2009</b>	7,806,251	10,154,436	8,564,448	12,840,802	-758,197	-2,686,366
<b>2010</b>	7,957,200	8,462,996	9,326,913	13,009,501	-1,929,713	-4,546,505
<b>Trends in 2010 compared to 2009</b>	1.02%	-16.65%	8.90%	1.31%	-	-
<b>Trends in 2011 compared to 2010</b>	-8.81%	22.42%	-28.45%	-17.46%	-	-
<b>2011</b>	7,256,040	10,360,892	6,673,222	10,736,828	582,818	-375,999
<b>Trends in 2012 compared to 2011</b>	15.05%	-16.05%	-1.64%	11.94%	-	-
<b>2012</b>	8,348,222	8,697,901	6,563,585	11,681,365	9,004,807	-2,983,464
<b>Trends in 2013 compared to 2012</b>	148.52%	31.99%	-0.66%	2.39%	-	-
<b>2013</b>	20,747,093	11,480,817	6,529,854	11,960,927	14,217,239	-480,110

Source: Statistical Office of the Republic of Serbia (2014): Fruit and Vegetables, Floriculture and Olive Oil, Agriculture and Rural Development; authors' estimate.

There are no quality standards for flowers in Serbia. Standards for woody ornamentals



were designed in accordance with the European Nurserystock Association (ENA), but they are yet to be adopted. With concurrence by international organizations, these standards will be implemented on a voluntary basis since they are not mandatory according to the new regulation of the EU No. 1308/2013 on quality standards in the areas of flowers and ornamental plants.

In order to facilitate production, subsidies have been secured. The basic subsidy for plant production amounts to the minimum payment of 52 EUR/ha, up to 100 ha of covered land area. Subsidies have been provided for fuel and fertilizers as well, while the subsidised insurance premium for plants, fruits, perennials, nursery stock and animals is at 40% of the paid insurance premium.

In terms of product range, seasonal and potted flowers are the most prevalent in Serbia, while the production of cut flowers is low. The value of export was at 1.7 million dollars, while the value of import was at 8.7 million dollars (Vujošević et al, 2007). During the past years production has grown at the annual rate of 20-30%. That is a tremendously high growth rate, but it is nevertheless insufficient. There is great interest for cooperation from the Netherlands, Hungary and Germany, but the issue is that only 800,000 roses can be acquired from Serbia, while Poland, for example, offers 4.5 million. Experts from the Netherlands, the world's leader in flower production, state that the highest quality roses are grown at the south of France, that Serbia has the highest prices in the entire European market, while they describe the market of Great Britain as the pickiest.

After taking a look at the SWOT analysis (Image 1) of the production of flowers in Serbia, it can be deduced that the country has favourable natural predispositions for the development of floriculture, as well as a good geographic position. It has tradition and experience, accumulated knowledge and skills. However, it is technically and technologically lagging behind the developed countries, it does not have sufficient equipment and financial resources. Moreover, it does not have an adequate development strategy and the infrastructure is poor. Still, its chances lie in its open borders with the EU, in increasing the synergistic effects through clustering and enhancing value creation through knowledge bases. Threats stem from the lack of investment, technological lagging behind, large number of imported products, as well as from the deficiency in good managers and discord with the EU standards.

**Image 1.** SWOT analysis of floriculture in Serbia

<b>STRENGTHS:</b>	<b>WEAKNESSES:</b>
Excellent land Very good climate Good geographic position Low labour costs There are schools and faculties which offer horticulture courses Tradition and experience Entrepreneurship with growth potential Good geographic/transport position Accumulated knowledge and skills Processing industry Developed production networks	Natural material resources are used Technical/technological lagging behind Insufficient equipment Insolvent financial resources Lack of a development strategy Difficulties in cooperation with others Bad infrastructure for producers (irrigation) High import taxes and fees
<b>OPPORTUNITIES:</b>	<b>THREATS:</b>
Resource optimization – increase of value per unit of invested raw materials Enhancement of value creation (through knowledge bases, communication) Facilitation of synergistic effects (through clustering) Joint marketing (joint appearances at fairs, image strengthening) Open borders with the EU countries Development of fresh flower sales at the Balkan market	Long-term lack of investment Technological lagging behind Emergence of imported products at the domestic market Market problems caused by economic instability Deficiency of good managers with practical experience Discord with the EU standards

Source: Author

### Conclusion

Production of ornamental plants represents a valuable potential in agricultural production, landscape architecture and other service activities, and Serbia has favourable climate conditions, geothermal resources and expert labour force. However, the value of imported floriculture products in Serbia is greater than the value of the exports.

The international horticulture market is growing, but it is highly competitive as well. A large portion of Serbian horticulture is still very limited and mainly owned by small estates, while the support infrastructure is underdeveloped. The development of floriculture cannot be based on tradition; investments into advanced production have to be made.

Growing of flowers should be treated as an independent economic activity with the introduction and utilization of EU recommendations and regulations. It is necessary to include the Eurostat codes for floriculture products in the list of national codes on

flowers, as well as to introduce appropriate CN in customs procedures<sup>4</sup>. It is essential to stimulate the formation of relevant clusters in order to facilitate the transfer of knowledge and technology through networking and organization of B2B and B2C events. Opportunities in local and regional tourism should be utilized through flower festivals, by the introduction of flowers as well as a wide array of derivative products (food items, old crafts, souvenirs, etc.). Subsidies should stimulate the production of floriculture products in order to support this activity and enhance the competitiveness of local producers on the foreign market.

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## EKONOMSKA OPRAVDANOST RAZVOJA FLORIKULTURE U SRBIJI

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### Sažetak

*Florikultura predstavlja deo hortikulture, poljoprivredne delatnosti koja je poslednjih decenija sve više u ekspanziji. Različita je od tradicionalne kulture, ne samo zbog povećanja prihoda od prodaje, već i zato što je cveće sve više prisutno u svakodnevnom životu, što je i dovelo do mogućnosti bavljenja florikulturom kao izvorom sredstava za život. Cilj rada je da se predstavi trenutna situacija u oblasti florikulture u svetu i u Srbiji, kao i da se ukaže na odnos uvoza i izvoza proizvoda florikulture. U radu je predstavljena SWOT analiza kojom je data slika trenutnog stanja florikulture u Srbiji i mogućnosti razvoja. Florikultura u Srbiji nije dovoljno zastupljena, iako postoje veoma dobri klimatski uslovi, plodno zemljište, tradicija i iskustvo, ali nedovoljno inoviranja, nedovoljno opreme, tehnička zastarelost u proizvodnji i nedovoljna usklađenost sa standardima EU.*

**Ključne reči:** florikultura, ukrasno bilje, uvoz, izvoz, proizvodnja

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