

THE IMPORTANCE OF RASPBERRIES IN SERBIA'S EXPORT MARKET

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Abstract: The paper analyzes the export of frozen raspberries from Serbia, one of the country's top 10 export products. The analysis covers the period from 2014 to 2024 in the production and foreign trade exchange of frozen and fresh raspberries. About the total food exported from Serbia, frozen raspberries take part in the total value with about 10%. With the total export of fruits and vegetables from Serbia, raspberry has a value of about 30%. The average export price of frozen raspberries in the observed period was 3.26 USD per kg. With the highest export price in 2022 of 5.53 USD and the lowest in 2018 of 2.05 USD per kg. The work aims to analyze the tendencies of raspberry exports from the Republic of Serbia to maintain and improve its position on the international market.

Keywords: frozen raspberry, export, import, tendencies on market

Introduction

Serbia has a long-standing tradition of cultivating and exporting raspberries, particularly in frozen form, which has been a key factor in the success of domestic production on the international market. Since the 1970s, raspberries have become one of the main export products of Serbian agriculture. Thanks to its high quality and favorable climatic conditions, Serbia has been one of the world's leading producers and exporters for decades. Even today, raspberries remain one of the most important food exports from Serbia. Raspberry exports generate significant foreign exchange income, with strong demand for frozen raspberries from Serbia, particularly in the European Union, the United States, Russia, and other countries. There is considerable demand for raspberries as an exclusive fruit in the European Union market (Germany, France, Belgium), which is experiencing a raspberry deficit. The high-quality, aromatic raspberry fruit from Serbia, along with its nutritional and medicinal

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properties on one hand, and the high standard of living in EU countries on the other, have contributed to the constant demand for this fruit (Kljajić et al., 2022, Paraušić and Simeunović, 2016).

Favorable climate and soil conditions have contributed to the fact that high-quality raspberries have been produced in Western Serbia for many years. The most famous regions of intensive raspberry production (Malinogorja: Ariljsko, Ivanjičko, Kosjeričko, Požeško, Šabačko, Valjevsko, Kopaoničko, etc.) are also the areas with the highest production in Serbia (Petrović and Leposavić, 2011). Raspberries are grown in the Republic of Serbia on about 20 thousand ha, with an average production of 108 thousand t and an average yield of 5.4 t ha⁻¹ in the analyzed period 2014-2024, according to SORS data. Production per inhabitant is 16 kg. The highest production is concentrated in Western Serbia and Šumadija, accounting for 86% of total output, followed by Southern and Eastern Serbia with 8%, Vojvodina with 4%, and the city of Belgrade with 2% (Vlahović and Radojević, 2023).

More than 90% of the total raspberry production is frozen and exported in the form of the rolend, grits and blocks, the remaining quantity is sold as fresh raspberries or processed into raspberry concentrates. The export structure is as follows: "Rolend" (nearly 60%) is primarily exported to Germany, Belgium, and France. "Griz" (30%) is mainly exported to France and Germany. "Bruh" makes about 5% and is exported to Germany and Belgium. "Block" represents less than 5% and is shipped to Germany and France. Other raspberry products are exported to Germany, Austria, etc. (Vlahović and Puškarić, 2023).

In the foreign trade exchange of food from Serbia, raspberry represents an important export product behind which the state should stand with a clearly defined strategy that would ensure continuous more efficient and profitable production of raspberry and its placement on the foreign market, as well as its promotion and protection as a national brand (Sarić et al., 2009).

Given that frozen raspberries are a significant export product from Serbia to EU countries, better organization and transparency in the chain of raspberry production, processing, and export are necessary. Otherwise, each segment of this chain individually suffers production and market risks, which negatively spills over to all participants each year (Veljković et al., 2006; Veljković et al., 2024).

Materials and methods

The paper analyzed the exports and imports of frozen raspberries as the leading product and fresh raspberries from the Republic of Serbia from 2014 to 2024. The most important trade partners and export destinations are indicated. Data sources were taken from the statistical database of the Republic of Serbia Statistical Office from the Foreign Trade section (SORS, 2025 <https://data.stat.gov.rs/>). Products in foreign trade exchange are given by sector and codes according to the international classification of SMTK. Statistical analysis was used to process the data and present the results. Changes in the observed values and their intensity of movement were quantified by calculating the average annual rates of change. The foreign trade results are presented in tables and graphs in units of value in thousand USD and quantitative in tons. The works of authors who studied the same issues were also analyzed, and a comparison and discussion of the results were provided.

Results and discussion

The favorable agro-ecological conditions of Western Serbia have influenced the production of raspberries on a larger number of farms. In these already traditional raspberry regions, family farms use their resources and workforce more efficiently and have many years of experience in this production. Based on the analysis of raspberry production in the period 2014-2024, it can be concluded that the smallest area and production of raspberries was recorded in 2014. The coefficient of variation (CV) for the areas under raspberry amounted to 14.3%, with an increase at an average annual rate (Rate) of 1.4%. Raspberry production almost stagnated, considering that the increase in the annual rate was 0.7% with a coefficient of variation of 12.3% in the observed period. Average raspberry yields are low at around 5.4 t ha⁻¹, given that yields two to three times higher are achieved in the raspberry regions of Serbia. For the analyzed period, raspberry yields decreased at the average rate of 0.9% per year (Table 1).

Table 1. Production of raspberry area and yields in the period 2014-2024.

Parameters	Average	Min.	Max.	CV in %	Rate in %
Area (10 ³ ha)	20.1	14.8	24	14.3	1.4
Production (10 ³ t)	107.9	82.6	127	12.3	0.7
Yield (t ha ⁻¹)	5.4	4.9	5.9	6.9	-0.9

Source: data SORS, author's calculation

Regarding raspberry yield and quality, good results are achieved at an altitude of over 400 m above sea level, most often 600-800 m, and the most common variety is Vilamet (Petrović and Leposavić, 2011). Production also requires a greater involvement of human labor in certain periods of raspberry vegetation, especially during harvest. Given that it is a labor-intensive production and that the problem of seasonal labor is increasing, average family farms produce raspberries on smaller areas of 0.20 to 0.50 hectares (Veljković et al. 2024).

The changing economic conditions in recent years on raspberry production in our country have not had a positive effect. Raspberry production is often limited and highly dependent on the influence of organizational and economic conditions. Regular and abundant fertility and high fruit quality can only be ensured through intensive and profitable raspberry production (Veljković et al., 2008; Sredojević et al., 2013).

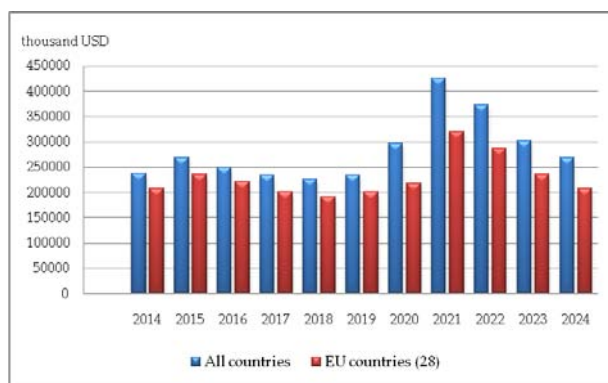
The leading place in fruit exports from Serbia is frozen raspberries in the observed period 2014-2024. In 2008, the average export was 89.9 thousand t, with a tendency to fall at an average rate of 1.1% per year, and the export value was 282.6 million USD with growth at a rate of 3.5% per year (Table 2 and 3). The average export price of frozen raspberries was 3.26 USD per kg, with an average annual growth of 4.7%, with the highest export price achieved in 2022 at 5.53 USD and the lowest in 2018 at 2.05 USD per kg.

Table 2. Export of frozen raspberries by value and quantity, export price and rank

Year	Rank	Exports value (thousand USD)	Exports quantity (t)	Unit value of export (USD per kg)
2014	8	236517.6	73252.6	3.23
2015	6	267566.4	93731.6	2.85
2016	9	247883.5	85956.9	2.88
2017	10	233233.4	94000.2	2.48
2018	11	225763.8	103275.8	2.19
2019	10	234343.9	114354.2	2.05
2020	5	295896.5	107745.2	2.75
2021	8	426143.1	97961.5	4.35
2022	7	372850.7	67364.5	5.53
2023	14	300692.3	72289.2	4.16
2024	18	268043.3	79582.5	3.37
Average	9.6	282630.4	89955.8	3.26

Source: data SORS, author's calculation

The ranking of frozen raspberry exports among the top 10 products exported from Serbia was monitored. Of the products from the food sector, only corn and frozen raspberries were ranked in the group with 10 leading products exported from the Republic of Serbia according to the export value. Compared to other products for the mentioned period, frozen raspberries achieved an average rank of 9.6 (Table 2). The ranking of frozen raspberries was followed by the authors Paraušić and Simeunović (2016) and Kljajić et al. (2022), and raspberry was ranked in the first 10 top export products. Research has shown that in 2023 and 2024, the ranking of raspberries by export value was lower and was not among the top 10 products (Table 2).



Graph 1. Export of frozen raspberries from the Republic of Serbia

During 2014-2024, an average value of 282.6 million USD was realized in the export of frozen raspberries, of which 81.1% was exported to EU countries. The highest value of exports was achieved in total in 2021 at 426 million USD, and exports to EU countries amounted to 320 million USD for the observed period (Graph 1).

According to the SORS, 2025 data for the observed period in the sector 00-Food, frozen raspberry participated in the value of exports with an average of 9.9%, and in the section 05- Vegetables and fruits, its participation was an average of 29.2%.

In terms of value, the export of frozen raspberries in the analyzed period had less growth at an average annual rate of 3.5%. Quantity exports of frozen raspberries tended to decrease at 1.1% on average rate per year. Frozen raspberry imports also decrease in value at an average rate of 2.7% and by quantity at 6.6% per year (Table 3).

According to SORS, 2025 data, Germany and France are the largest importers of frozen raspberries from Serbia, which is confirmed by research by Vlahović and Puškarić (2023), whereby Germany imports 30.1% and France 19.5% of the total exports from Serbia, but import rates are decreasing. Other importing countries are Belgium, Great Britain, the USA, the Netherlands, Sweden, Poland, Canada, etc. Serious competitors of Serbia in the export of raspberries on the EU market are Poland and Ukraine.

Table 3. Export and import of frozen and fresh raspberries during 2014-2024.

Export in thousand USD	Average	Min.	Max.	CV in %	Rate %
05 - Vegetable and fruit	967962.5	747676.7	1273825	19.9	5.5
0583220 - Raspberry frozen	282630.4	225736.8	426143.1	22.7	3.5
0579420 - Raspberry fresh	6556.5	2218.1	13013.5	53.1	-12.6
Import in thousand USD					
05 - Vegetable and fruit	494261	302653.8	786231.2	35.6	11
0583220 - Raspberry frozen	16775.2	6762.2	30300	36.9	-2.7
0579420 - Raspberry fresh	364.4	38.8	1656.7	122.4	23.1
Export in tonnes	Average	Min.	Max.	CV in %	Rate %
05 - Vegetable and fruit	712645.5	578152.1	840080.5	12.4	-0.8
0583220 - Raspberry frozen	89955.4	67364.5	114354.2	17.3	-1.1
0579420 - Raspberry fresh	3313.5	970.5	6422.4	58.9	-16.7
Import in tonnes					
05 - Vegetable and fruit	504496.5	372981.3	601873.1	14.8	4.6
0583220 - Raspberry frozen	6393.8	2319.2	11067.1	46.4	-6.6
0579420 - Raspberry fresh	97.1	2.2	500.3	142.7	14.9

Source: data SORS, author's calculation

The import of frozen raspberries to Serbia is mainly from the CEFTA countries, with Bosnia and Herzegovina sharing about 90%. Raspberry has a pronounced income elasticity of demand, which means that potential importers and consumers of raspberries will be interested in better quality of this product (Veljković et al., 2008; Vlahović and Puškarić, 2023).

In addition to frozen raspberries, the Republic of Serbia also exports fresh raspberries for the observed period. The largest export of fresh raspberries was 13 million USD in 2015, and the smallest export of 2.2 million USD was in 2023 and 2.9 million USD in 2024. From that, 99.1% of fresh raspberry exports were made to EU countries. The export of fresh raspberries from Serbia is not continuous, which is confirmed by the high values of the coefficient of variation in both

exports and imports in terms of both value and quantity. The export of fresh raspberries tends to decrease, the annual rates are negative, and the import tends to increase (Table 3). The fresh raspberries are mainly exported to Austria, Germany, and Italy, and fresh raspberries are imported from EU countries, mostly from Spain.

Conclusion

Support in the primary production and processing of raspberries from the relevant Ministry through subsidies exists, but transparency among all participants in the production chain and better organization are also important. Strict control in the production and processing chain is necessary, along with clear traceability of the products, to preserve quality and meet the strict EU quality standards. The high quality of raspberries produced in Serbia and their protected geographical origins, such as the Arilje raspberry, are a guarantee of quality and form the basis for strengthening the competitive position of both frozen and fresh raspberries in the international market.

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