

Global Raspberries Market Trends and Their Impact on the Macedonian Raspberries Market

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ABSTRACT

The production of raspberries is of great importance for the development of the agro-industrial complex. Its products are used for direct consumption or as raw materials in the food industry. The demand for fruit on the world market has increased significantly, especially for small (fine) fruits (cherries, raspberries, currants), frozen and canned fruit. Fruit growing participates with about 3% of the agricultural GDP in Republic of North Macedonia. Rich yield, unlimited sales, high purchase prices and European earnings make growing raspberries a profitable agribusiness.

The purpose of the research in this paper is to understand the situation on the world market of raspberries and how that situation affects the market in the Republic of North Macedonia. The aim is to analyze the import and export of raspberries in the world and the world's largest exporters and importers of raspberries are analyzed. All this contributes to the perception of the impact of world raspberry trade on production opportunities and raspberry cultivation in the Republic of North Macedonia. Therefore, this paper, in addition to world data of raspberries production, also presents the volume and value of frozen berry exports from the Republic of North Macedonia in the period 2015-2019, as well as foreign trade balance (import-export) in the country. Foreign trade balance (import-export) in Republic of North Macedonia indicates that in 2019 there is a positive foreign trade balance (import-export), which is higher by 56% compared to 2015. This means that the production of berries is a

promising agricultural branch that has positive effects on the country's foreign trade balance.

Key words: raspberries, global market trends, Macedonian raspberries market

INTRODUCTION

During the last period, the agricultural production in the Republic of North Macedonia became more or less variable as a result of several reasons. First, unhealthy parity is related to the value and exclusion of elements that produce products that orient themselves towards lower flows in real productivity. On the other hand, there is a strong dependence on meteorological and climatic conditions and, in the end, the low production capacity of the pre-existing industry for the nominal purchase of real production. The importance of competitiveness is growing in all sectors of the economy, including agriculture (Kravčáková Vozárová, 2013).

Raspberries are considered to be the most valuable fruit because of the juice of this plant. The yield arrives in the second year after planting so that in the third year it gives full fruit. The profitability and competitiveness of raspberry production depends both on an array of economic and climate-related factors and on individual decisions made by producers (Di Vittori et al, 2018).

Raspberry is a fine fruit with excellent taste and aroma, with high

nutritional, dietary and medicinal value. There is no human being for whom raspberries are not a useful fruit. Raspberry fruits are an excellent raw material for processing, and they are fruits with a large assortment of processed fruits, and frozen fruits can be used all year round. Lately, raspberry fruits are increasingly in demand for consumption in the fresh state during a longer period of the year. After strawberry, raspberry has the greatest economic importance in the group of strawberry fruit. This kind of fruit has many advantages over other fruit plants. It multiplies easily. It starts fruiting early - it bears fruit in the second year and reaches full fruition already in the third year, thus quickly repaying the invested investments. The raspberries adapt to different climatic and soil conditions and can be grown at an altitude of 1000 to 1200 m.

High economic results achieved in the production process as well as generating profits were crucial in the decision to invest in perennial plantations of raspberries and start economically profitable business. However, production of the world's most advanced and highest quality raspberry varieties should be stimulated instead of relying on the old varieties without significant potential. (Kljajić, 2017).

Increased economic efficiency of raspberries can be achieved from its primary production, as well as its processing and improved product quality. The economic importance of raspberries consists in: a relatively large amount of profit per unit of invested capital and labor, reducing unemployment in the world, better economic development by building and expanding the capacity of the food industry, an indirect influence on the development of related industrial activities, significant net foreign exchange effect, and particular importance for allocating storage infrastructure (particularly local roads) as a precondition for the overall socio-economic development (Sredojevic et. al.

2013). One factor that has contributed to the growth in markets for fresh berries is the recognition that berries are high in desirable phytochemicals that may promote human health and protect against disease (Sobekova et.al., 2013).

MATERIALS AND METHODS

All the data collected and analyzed in this paper originate from reliable international databases (UN FAO, UN Comtrade, Eurostat, ITC Trade Map, National official statistics) that offer wide range of data for all countries of the world. The same methodology is used to collect data from the Republic of North Macedonia. The research methodology involves more calculation and different statistical analysis methods. Presentation of quantitative, continuous or measured data is through tables and graphs. Statistical methods involved in carrying out a study include planning, designing, collecting data, analyzing, drawing meaningful interpretation and reporting of the research findings. We used a kind of quantitative research, which seeks to quantify the data, and typically, applies some form of statistical analysis.

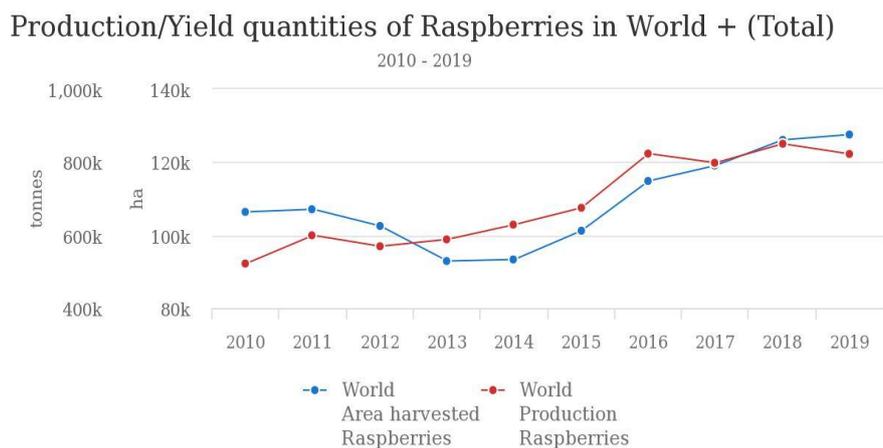
RESEARCH RESULTS

Analysis of global raspberries market World raspberries production analysis

In the global market, there now seems to be mostly a small supply for a high demand of raspberries. The coronavirus has also taken a toll on this market, as sales have been poor in recent months.

Demand for raspberries and blackberries has risen sharply in Europe and North America in recent years. In the Western countries, raspberries are considered a luxury product (Bojkovska et.al., 2020).

The latest FAOSTAT data show that from 2010 to 2019, the production has increased from 373 thousand tons to 684 thousand tons (increasing of around 46%).



Source: FAOSTAT (Jan 11, 2021)

Figure 1. Production/Yield quantities of raspberries in the world (2010-2019)

When analyzing the world production of raspberries in the period 2010-2019, it is significant that the production is the highest in 2018 (850.422 tons) and it is about 64% higher compared to the production in 2010, when production is the lowest.

Regarding the areas under raspberries, the smallest planted areas were recorded in 2013 (92.895 hectares), while in 2019 the largest areas under raspberries were planted in the world (127.578 hectares) which is an increase of 73% in 2019 compared to 2013 (Figure 1).

In 2017, the area of land planted with raspberries is a total of 119.088 hectares. According to the area of raspberries planted in 2017, on first place is Poland with 29.317 hectares of land planted with raspberries, followed by Serbia with 21.861 hectares and in third place is Russia with 20.185 hectares of land planted with raspberries, due to primarily due to the ideal climatic and soil conditions in these countries that enable good raspberry production as well as the export policies that these countries have which makes production favorable for producers. During this period Republic of North Macedonia is on the 36th place with only 28 hectares of land planted with raspberries (Table 1).

As much as 25% of the total area on which raspberries are produced in the world belongs to Poland to 18% belongs to Serbia and 17% to Russia while Republic of North

Macedonia participates with 0.024% in the total area planted with raspberries in the world.

Table 1. Total planted area with raspberries by country (in hectares), 2017

Country	Range	Raspberry, total planted area (hectares)
World		119 088
Poland	1	29 317
Serbia	2	21 861
Russia	3	20 185
United States	4	8 272
Mexico	5	6 390
Ukraine	6	5 000
Chile	7	4 784
Bosnia and Herzegovina	8	3 296
Azerbaijan	9	3 142
Spain	0	2 482
Republic of North Macedonia	6	28

Source: Author's research according to data from <https://www.tilasto.com/en/topic/geography-and-griculture/crop/raspberries/raspberries-area-harvested>

Despite the relatively small production of raspberries in the Republic of North Macedonia, in 2018 data show a significant increase in raspberry production (by 96%) compared to 2010. In the analyzed period, there is an increase in the amount of raspberry production from year to year. In 2018, the production of raspberries increased by 215 tons compared to 2010 when only 9 tons of raspberries were produced.

Raspberries global export and top export countries

The key indicator of the development of agriculture and food

industry of a country is the export of agricultural products. Therefore, export is of great importance from the point of view of the national economy. A large number of factors influence the placement of

agricultural products in the international market, of which the most important are: price, quality, competitiveness, certain administrative measures of state bodies, etc (Kljajlić, 2017).

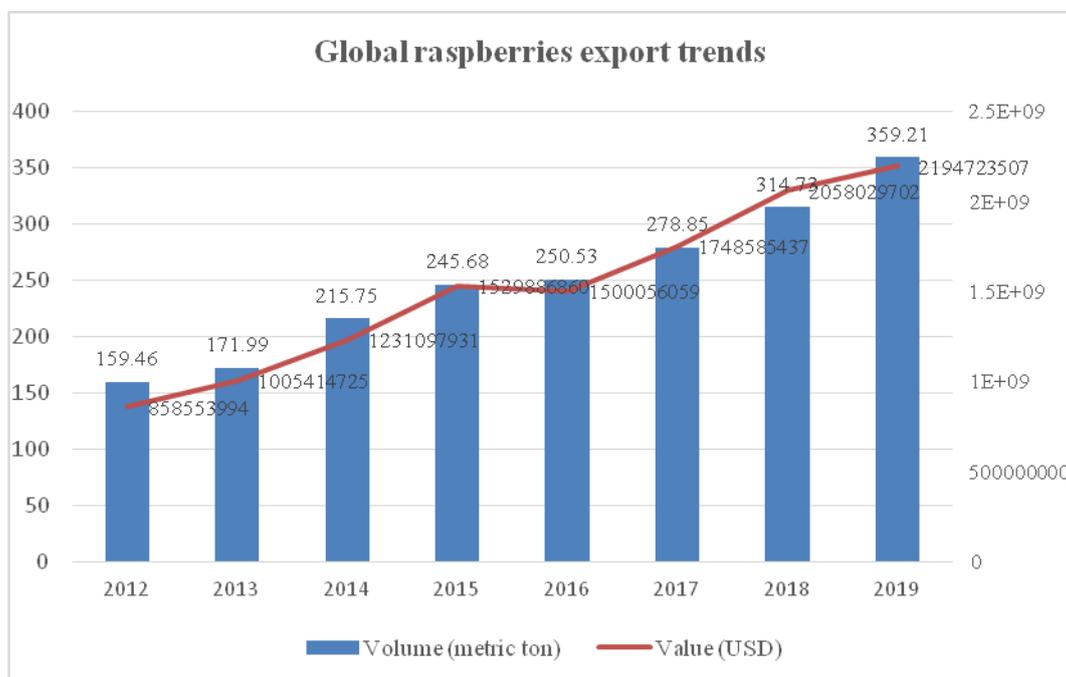


Figure 2 Global raspberries export trends by volume (metric ton)/value (USD), 2012-2019

The data in Figure 2 show that world raspberries export increase year by year in both volume and value. Value of raspberries export increased for 56% in 2019 compared to 2012, and in value (USD) export increases for 61%.

Table 2. Top 10 world export countries by value (USD) in 2019

Country	2019	
	Rank	Value (USD)
Spain	1	520.592.404
Mexico	2	402.268.656
United States	3	354.789.384
Morocco	4	250.923.533
Portugal	5	237.330.728
Netherlands	6	202.249.301
Germany	7	42.355.072
Belgium	8	41.872.715
France	9	29.725.280
South Africa	10	17.445.023

Source: Author's research according to data from <https://www.tridge.com/trades/081020/export>

In Table 2 are presented top 10 world export countries with their export value (in USD) in 2019. Spain is on the first place with export value of 520.592.404 USD and South Africa is on the tenth place

of top 10 world export countries with export value of 17.445.023 USD.

Raspberry global import and top import countries

The data in Figure 3 show that world raspberries import increase year by year in both volume and value. Value of raspberry import increased for 50% in 2019 compared to 2012, and in value (USD) export increases for 63%.

Table 3. Top 10 world import countries by value (USD) in 2019

Country	2019	
	Rank	Value (USD)
United States	1	1.356.945.504
Germany	2	310.336.408
Canada	3	305.972.753
United Kingdom	4	274.902.226
Spain	5	219.436.231
Netherlands	6	168.333.387
France	7	138.902.914
Austria	8	50.722.087
Belgium	9	49.058.146
Switzerland	10	40.890.224

Source: Author's research according to data from <https://www.tridge.com/products/raspberry/import>

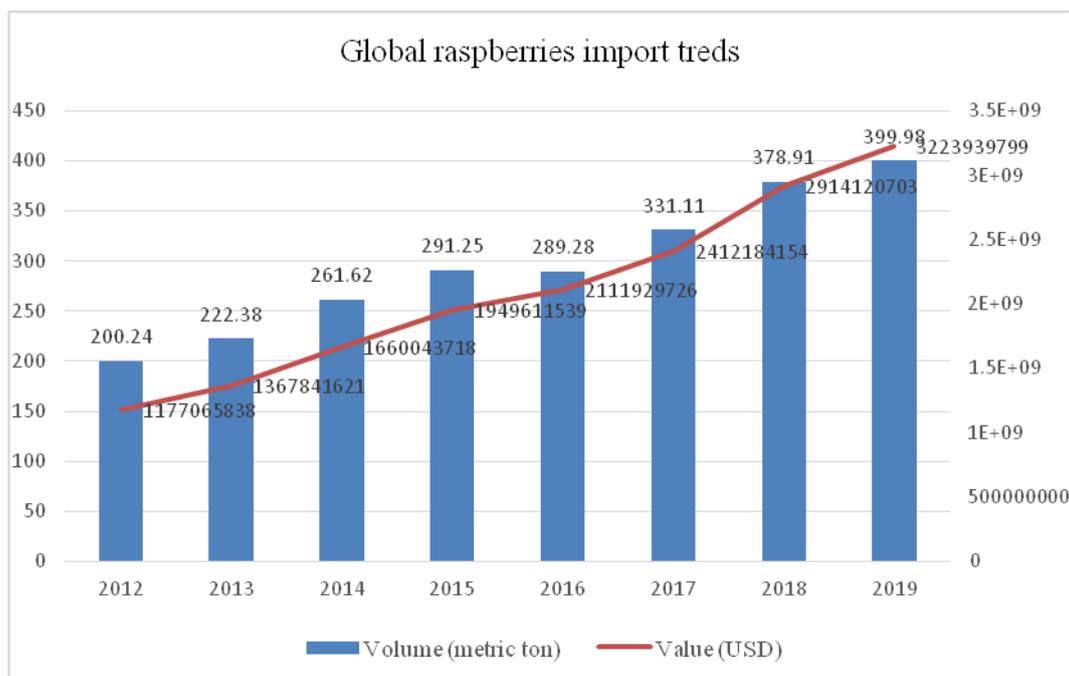


Figure 2. Global raspberries import trends by volume (metric ton)/value (USD), 2012-2019

In table 3 are presented top 10 world import countries with their import value (in USD) in 2019. United State are on the first place with import value of 1.356.945.504 USD and Switzerland is on the tenth place of top 10 world export countries with import value of 40.890.224USD.

The Position of the Republic of North Macedonia on the global raspberry market

In 2017 according to the quantitative production of raspberries, Republic of North Macedonia is on the 33rd place in the world with 168 tons of produced raspberries, according to the area of planted raspberries is on the 36th place with 28 hectares of agricultural area under raspberry, while according to the yield per hectare it is on the 19th place in the world with 60,000 hg/hectare (table 4).

Table 4. The position of Republic of North Macedonia by area under raspberries, production and yield worldwide in 2017

	Rank	Value
Raspberry, quantity of production (tons)	33	168
Area under raspberries (hectares)	36	28
Raspberry, yield (hectograms per hectare)	19	60.000

Source: Author's research according to data from <https://www.tilasto.com/en/country/macedonia/geography-and-agriculture/raspberries-yield>

This increase in the yield of raspberries in Republic of North Macedonia in 2017 compared to the previous year is presumed to be due to the improvement of the conditions for production of raspberries, i.e. increased support for raspberry growers as well as with increasing the number of subcontractors that together function as agricultural cooperatives for the production of raspberries.

There is expectation to follow this trend of increasing raspberry production in Republic of North Macedonia in the future, especially by increasing the sales and exports of raspberries produced in Republic of North Macedonia that are in demand on the market due to their unique quality and bliss.

In the same period, the world export of raspberry, blackberry, mulberry, logan, black, white or red currant and gooseberry, i.e. all frozen berry products is shown in Table 5 presented in kilograms.

According to the data in table 5, Serbia ranks first in the world in terms of export of berry products with 123,599,440 kg, while Republic of North Macedonia ranks 29th with 786,391 kg.

Table 5. Exported quantities of frozen raspberry, blackberry, mulberry, logan, black, white or red currant and gooseberry from the top 10 exporting countries and from Republic of North Macedonia for all countries (in kg) in, 2017

Country	Rank	Raspberry, blackberry, mulberry, logan, black, white or red currant and gooseberry, frozen, export weight (kg)
Serbia	1	123.599.440
Poland	2	113.521.761
Chile	3	45.849.208
Sierra Leone	4	38.040.000
Bosnia and Herzegovina	5	24.021.855
Germany	6	18.674.900
Belgium	7	18.514.076
Belarus	8	18.402.790
Netherlands	9	18.092.643
China	10	15.205.435
Macedonia	29	786.391

Source: Author's research according to data from http://data.un.org/Data.aspx?d=ComTrade&f=_11Code%3a9%3bcmdCode%3a081120

The export value of exported raspberry, blackberry, mulberry, logan, black, white or red currant and frozen gooseberries, from Republic of North Macedonia in the period from 2010 to 2019 are shown in Table 6.

From table it can be seen that every year with the exception of 2016, Republic of North Macedonia exports in the amount of over 1.000.000 USD, with the highest

export value in 2019 in the amount of 2.754.790 USD, which is 53% higher than the export value of raspberries in 2010, ie by 66% higher compared to 2016 (when the production of raspberries is the lowest in the analyzed period).

Table 6. Export value of frozen raspberries, blackberries, mulberries, logan, black, white or red currants and gooseberries (unsprayed, steamed, boiled) in R.N. Macedonia, (in USD), 2010-2019

Year	Export value of frozen raspberries, blackberries, mulberries, logan, black, white or red currant and gooseberries (unsprayed, steamed, boiled)
2010	1.289.665
2011	1.131.803
2012	1.485.531
2013	1.324.091
2014	1.976.814
2015	1.181.000
2016	931.243
2017	1.766.424
2018	2.487.155
2019	2.754.790

Source: Author's research according to data from <https://www.tilasto.com/en/country/macedonia/handel/rasp-mulberries-etc-frozen-export-value>

The following Table shows the data for Republic of North Macedonia for the total export and import of berry fruits by value in USD and in kilograms in 2015-2019.

Table 7. Import, export and foreign trade balance (import-export) of berry fruit in R. N Macedonia by quantity (kg) and value (USD) in the period 2015-2019

Year	Frozen raspberries, blackberries, mulberries, logan, black, white or red currants and gooseberries (unsprayed, steamed, boiled)				Foreign trade balance (export-import) -USD
	EXPORT		IMPORT		
	Quantity (kg)	Value (USD)	Quantity (kg)	Value (USD)	
2015	1.181.000	673.270	183.898	93.792	579.478
2016	931.243	655.948	149.206	73.805	582.143
2017	1.766.424	786.391	444.411	256.055	530.336
2018	2.487.155	1.363.221	281.233	123.476	1.239.745
2019	2.754.790	1.899.809	208.452	577.796	1.322.013

Source: Author's research according to data from United Nations Statistics Division http://data.un.org/Data.aspx?d=ComTrade&f=_11Code%3a9%3bcmdCode%3a081120

Table 7 shows that in 2019, Republic of North Macedonia exported a total of 2.754.790 kilograms of berries with a value of 1.899.809 USD, while in the same year it imported 208.425 kg with a value of 465.128 USD. Export-import value indicates the fact that in Republic of North Macedonia in 2019 there is a positive foreign trade balance (import-export) in the amount of 1.322.013 USD, which is higher by 56% compared to 2015. This means that the production of berries is a promising

agricultural branch that has positive effects on the country's foreign trade balance.

CONCLUSION

In accordance with the favorable natural and geographical conditions in the Republic of North Macedonia, the share of fruit growing in the structure of arable land, especially of noble fruits is insufficient, due to the lack of systemic and financial-material conditions and the non-corresponding structure of supply and

demand. The main problems in fruit growing are the unresolved issues in the trade sphere such as unorganized trade and uncontrolled import, pronounced variability of production due to the indulgence of natural conditions and lack of high-quality seedlings that affect productivity. Recently, positive tendencies have been felt in the direction of increasing the production of noble fruits.

Unfortunately in Republic of North Macedonia there isn't interested in growing raspberries, because it is not in accordance with the Macedonian tradition. Although in our country there are favorable soil and climatic conditions for its cultivation, it is a deficient fruit crop. It is grown on an area of several hectares. Considering the requirements of this crop in terms of ecological conditions, appropriate regionalization has not been performed, i.e. raspberry plantations have been established in areas that are not very favorable for its development and fertility.

The research results show that from 2010 to 2019, the world raspberries production has increased from 373 thousand tons to 684 thousand tons (increasing of around 46%). Also, world raspberry export increase year by year in both volume and value. Value of raspberry import increase for 50% in 2019 compared to 2012, and in value (USD) export increases for 63%. The world raspberry import increase year by year in both volume and value. Value of raspberry import increased for 50% in 2019 compared to 2012, and in value (USD) export increases for 63%.

Although, Republic of North Macedonia participates with 0.024% in the total area planted with raspberries in the world, Export-import value indicates the fact that in this country there is a positive foreign trade balance (import-export) in last five years. This means that the production of berries is a promising agricultural branch that has positive effects on the country's foreign trade balance.

REFERENCES

1. Bojkovska K., Jankulovski N., Mihajlovski G., Momirceski J. 2020. Analysis of market opportunities for raspberry production in the Republic of North Macedonia. *International Journal of Research - GRANTHAALAYAH* ISSN (Print): 2394-3629 December 2020, Vol 8(12), 149 – 154 DOI: <https://doi.org/10.29121/granthaalayah.v8.i12.2020.2698>
2. Di Vittori L., Mazzoni L., Battino M., Mezzetti B. 2018. Pre-harvest factors influencing the quality of berries. *Scientia Horticulturae* 233: 310–322. DOI: 10.1016/j.scienta.2018.01.058.
3. Julia Lernoud, Jason Potts, Gregory Sampson, Bernhard Schlatter, Gabriel Huppe, Vivek Voora, Helga Willer, Joseph Wozniak, and Duc Dang (2018), *The State of Sustainable Markets – Statistics and Emerging Trends 2018*. ITC, Geneva.
4. Kljajić N. 2017. Production and export of raspberry from the republic of Serbia. *Економика*, Vol. 63, April-June 2017, № 2.p:45-53
5. Kravčáková Vozárová I. 2013. The measurement of the competitiveness of EU agricultural production at the macroeconomic level. *Exclusive Journal* 2013(1): 155–160.
6. Sobekova Kristina, Thomsen Michael, Ahrendsen Bruce. 2013. Market trends and consumer demand for fresh berries. *Applied Studies In Agribusiness And Commerce*. 7. 11-14. 10.19041/Abstract/2013/2-3/1.
7. Sredojevic Zorica, Kljajić Nataša, Popović Nikola. (2013). Investing in Raspberry Production as an Opportunity of Sustainable Development of Rural Areas in Western Serbia. *Economic Insights - Trends and Challenges*. Vol. II (LXV). 63-72
8. Wróblewska Wioletta, Pawlak Joanna, Paszko Dariusz. 2019. Economic aspects in the raspberry production on the example of farms from Poland, Serbia

- and Ukraine. Journal of Horticultural Research 2019, vol. 27(2): 71–80 DOI: 10.2478/johr-2019-0019
9. <https://www.internationalraspberry.net/>
 10. www.faostat.org
 11. www.data.un.org
 12. www.tilasto.com
 13. www.tridge.com

14. www.stat.gov.mk

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