

CHANGES AND TRENDS OF PEACHES AND NECTARINES MARKET IN ROMANIA

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Abstract

This paper analyses the main indicators reflecting the evolution of the peach and nectarine production and marketing sector in Romania for the period 2012-2017. The most important indicators which are analyzed refers are production of peach and nectarine at the national level, but also macroregional and regional, the average level of price for each of them, the value of import and export. From an economic point of view, peach plantations are a particular importance, occupying the third place, after apple and plum. In Romania, the peach occupied significant areas, but after 1990, they have diminished massively. Peach plantations in Romania is more popular compared to nectarine. The data used in the paper was taken from the National Institute of Statistics and specialized international sites. The results of this analysis have been highlighted in relevant tables and graphs.

Key words: peaches, nectarines, production, annual consumption, export, Romania

INTRODUCTION

Worldwide, peach is ranked second in the list of fruit trees that have fallow fruits. First, the top of these species is apple [15].

Researches in the field have shown that the peach is originates from China, and a number of remarks have been found about it. The peach belongs to the Rosales Order, the Rosaceae family [5].

At present, peach plantation is found on all continents, especially between 50 degrees north latitude and 35-49 degrees south latitude [15].

Peaches and nectarines are fruits that are crafted through a series of significant bioactive principles, helping to strengthen the immune system. For example, 100 grams of fresh peach contains the following elements required for human body: 86.5 grams of water; 10.4 grams of carbohydrates; 0.9 grams of albumin; 0.9 grams of food fiber; 0.7 grams of free organic acids; 20 milligrams of calcium; 363 milligrams of potassium; 34 milligrams of phosphorus; 16 milligrams of magnesium; 50 milligrams provitamin A; 4.1

milligrams of iron, 10 milligrams of vitamin C; 0.70 milligrams of vitamin PP [3].

According to statistical data, in 2017, were cultivated 1,528,026 hectares with peaches and nectarines and a production of 24,665,205 tons were recorded worldwide. The distribution of continental production was as follows: Asia 69.4%; Europe 18.4%; America 7.6%; Africa 4.2%; Oceania 0.3%. The world's top peach and nectarine producers are made up of: China; Spain; Italy; Greece; America; Turkey; Iran; Egypt; Chile; Korea [7].



Photo 1. Springold
Source: [6]

The peaches and nectarines are for consumption in fresh and processed form. Likewise, as in the world, in Romania there are find three groups of peach varieties: *Peaches varieties for fresh consumption*: Springold; Cardinal; Jerseyland, etc [6].

Varieties of peach for industrialization: Babygold 6; Fortuna; Vivian, etc [15, 16].



Photo 2. Babygold 6

Source [4]

Nectarines varieties: Fantasia; Nectared 4; Romamer, etc [15, 16].



Photo3. Fantasia

Source [14]

MATERIALS AND METHODS

In the research on the market of peaches and nectarines, specialized materials from the National Institute of Statistics of Romania, as well as materials from specialized sites were consulted and analyzed. The analysis is based on the specific indicators of the peach and nectarine production and marketing sector. In this case, a number of indicators have been

analyzed, such as: the number of peaches and nectarines both at national level and at macroregional level; production of peaches and nectarines at national level and by macroregions; average production for peaches as well as for nectarines at national and macroregional level; the average price for peaches in Romania; average annual per capita consumption of peaches and nectarines in Romania; imports and exports of peaches and nectarines related to Romania. Between 2012 and 2017, indicators specific to the peach and nectarine production and marketing sector were mainly analyzed in dynamics.

RESULTS AND DISCUSSIONS

The number of peaches and nectarines found in fruit orchards presents an element of interest in the situation where a particular emphasis is placed on the production and marketing of fruit [2].

In Romania, find a variety of peach and nectarine varieties both domestic and foreign.



Photo 4. Peach blossoms.

Source: [9]



Photo 5. Nectarine blooming.

Source: [13]

The dynamics of the number of peaches and nectarines in Romania for the period 2012-2017 is presented in Table 1. The data on the number of peaches and nectarines have been presented both at national level and on macroregions. Regarding the number of peaches, it can be noticed that, during the analysis period, it registered a decreasing trend at national level. In 2017, the number of peaches per piece decreased by 20.42% compared to 2012. In 2017, the lowest number of peaches per fruit (1,075,956) was registered at the national level. At the macroregional level, the number of peaches per year has varied from year to year. In 2017, the number of peaches per head has decreased compared to 2012 in all macro-regions. The largest number of peaches per year was recorded in the year 2013 (511,464) in

macroregion 2. At the opposite end, the smallest number of peaches per fruit was recorded in 2016 (111,196) in macroregion 3. The number of fruit nectarines in Romania in the period 2012-2017 recorded oscillations from one year to the next. In 2017, the number of nectarines decreased by 11.08% on the national level compared to 2012. Regarding the evolution of the number of nectarines at the macroregional level in 2017, compared to 2012, the following situation was registered: in macroregion 1, the number of nectarines on wheat increased 9.90%; in macroregion 2, there was a decrease in the number of nectarines by 63.55%; in macroregion 3 there was a substantial increase in the number of peaches by 104.41%; in macroregion 4 there was a 14.36% decrease in the number of peaches per fruit.

Table 1. Dynamics of the number of peaches and nectarines at national and macro-regions, period 2012-2017 (number)

Specification	2012	2013	2014	2015	2016	2017	2017/2012 (%)
PEACHEAS							
Romania	1,351,970	1,278,842	1,148,844	1,134,639	1,092,259	1,075,956	79.58
Macroregion 1	355,395	350,500	357,544	341,885	362,316	344,566	96.95
Macroregion 2	491,171	511,464	373,716	378,773	355,482	345,121	70.26
Macroregion 3	128,406	112,608	121,524	113,500	111,196	127,344	99.17
Macroregion 4	376,998	304,270	296,060	300,481	263,265	258,925	68.68
NECTARINIES							
Romania	51,698	48,495	52,356	29,720	37,962	45,972	88.92
Macroregion 1	14,580	15,261	16,081	11,434	12,058	16,024	109.90
Macroregion 2	15,720	7,297	18,285	5,166	10,568	5,731	36.45
Macroregion 3	4,960	15,339	6,986	7,018	9,612	10,139	204.41
Macroregion 4	16,438	10,598	11,004	6,102	5,724	14,078	85.64

Source: Own calculation based on National Institute of Statistics, Tempo- Online Database, 2019 [11]

The total production of peaches and nectarines obtained in Romania is mainly destined for domestic consumption. Of the production, only a small part is allocated for export. The dynamics of global peach and nectarine production, both nationally and macro-regional in the period 2012-2017, is presented in Table 2.

The production of peaches and nectarines in Romania has recorded variations from year to year. In Romania, the most significant peach production was achieved in 2014 (23,764 tonnes) and the smallest production was 16,838 tonnes (2012).

In 2017, peach production increased by 10.14% compared to 2012, but declined 21.94% compared to 2014, when peach production in the analyzed period was recorded. At the level of the macroregions, the data presented show that: the highest production of peaches was registered in 2014 (10,720 tons), in macroregion 1; the smallest peach production was achieved in 2015 (1,606 tonnes) in macroregion 3. In macroregion 2, in 2017, peach production decreased by 4.77% compared to 2012.



Photo 6. Peaches in plantation

Source: [17]

In macroregion 4, in 2017, peach production increased by 11.56% compared to 2012. The production of nectarine produced in Romania is well below the production of peaches. In the analyzed period, nectarine production has changed from one year to the next, both at the national level and within macroregions. At the

national level, the most significant production of nectarines was recorded in 2014 (949 tonnes). In 2017, the production of nectarines increased by 34.57% compared to 2012. At the level of the macro-regions, the following were recorded: the highest production of nectarines was 481 tons, in 2014 macroregion 1; the smallest production of nectarines was 55 tons, the macroregion 2; in macroregion 3, in 2017, there was the highest percentage increase of nectarine production (+153.44%) compared to 2012; in macroregion 4, in 2017, nectarine production declined by 15.9% compared to 2012. In Romania, a significant peach production is found in Constanta; Dolj Bihar; Timis. There are areas where plantation of peaches is not present in Romania because there are areas where the climate is cold and is not suitable for these fruits [15].

Table 2. Dynamics of peach and nectarine production at national and macro-regional level, period 2012-2017 (tonnes)

Specification	2012	2013	2014	2015	2016	2017	2017/2012 (%)
PEACHES RODUCTION							
Romania	16,838	18,427	23,764	21,325	22,869	18,546	110.14
Macroregion 1	6,052	6,946	10,720	9,656	10,113	7,163	117.91
Macroregion 2	5,418	5,728	5,540	5,508	5,183	5,160	95.23
Macroregion 3	1,650	1,654	2,011	1,606	2,072	2,075	125.75
Macroregion 4	3,718	4,099	5,493	4,555	5,501	4,148	111.56
NECTARINES PRODUCTION							
Romania	590	703	949	494	778	794	134.57
Macroregion 1	175	227	481	257	288	266	152.00
Macroregion 2	162	98	144	55	251	217	133.95
Macroregion 3	58	178	109	73	146	147	253.44
Macroregion 4	195	200	215	109	93	164	84.10

Source: Own calculation based on National Institute of Statistics, Tempo- Online Database, 2019 [11]

The dynamics of average peach and nectarine production on the tree at national and macro-regional level in 2012-2017 is presented in table no. 3. In terms of the average production of peaches and nectarines on the tree, there are different developments from one year to the next. At national level, an average yield of 21 kg (2014 and 2016) for peaches has been recorded. The smallest average yield for peaches was 12 kg / tree (2012).

In Romania, average peach tree production in 2017 increased by 41.66%. At the macroregional level, in 2017, the increase in

average production on the peach tree is observed compared to 2012. The most significant average peach tree production was 30 kg (2014) in the macroregion 1. At the opposite pole, the the smallest average tree yield was 10 kg (2014) in macroregion 4.

Regarding the average production on the nectarine tree at national level in 2017, there was an increase of 54.54% compared to 2012. The average production on the nectarine tree in Romania varied between 11-20 kg. The largest average production on the nectarine tree was 38 kg (2017), recorded in

macroregion 2. In this macroregion, the highest increase of the average production on the nectarine tree was recorded, by 280% in 2017 compared to the year 2012. In macroregion 1 and in macroregion 3 there

were registered increases in average per capita production in 2017 compared to 2012. At the level of macroregion 4 the average production on the nectarine tree remained constant in 2017 compared to 2012 (12 kg / tree).

Table 3. Average production of peaches and nectarines on the national and macro-regional period 2012-2017 (kg / tree)

Specification	2012	2013	2014	2015	2016	2017	2017/2012 (%)
AVERAGE PRODUCTION OF PEACHES							
Romania	12	14	21	19	21	17	141.66
Macroregion 1	17	20	30	28	28	21	123.52
Macroregion 2	11	11	15	15	15	15	136.36
Macroregion 3	13	15	17	14	19	16	123.07
Macroregion 4	10	13	19	15	21	16	160.00
AVERAGE PRODUCTION OF NECTARINES							
Romania	11	14	18	17	20	17	154.54
Macroregion 1	12	15	30	22	24	17	141.66
Macroregion 2	10	13	8	11	24	38	380.00
Macroregion 3	12	12	16	10	15	14	116.66
Macroregion 4	12	19	20	18	16	12	100.00

Source: Own calculation based on National Institute of Statistics, Tempo- Online Database, 2019 [11].

The evolution of the average price for peaches in Romania is presented in Fig.1. During the period, the average price for peaches has evolved differently. From the presented data it is noted that in 2012, the highest price for peaches was recorded, namely 4.2 lei / kg. In 2013, the price for peaches registered a slight decrease reaching 4.13 lei / kg. In the period 2014-2015, the price for peaches was 3.73 lei /kg, registering a decrease of 11.2% compared to 2012. In 2016, the price continued its descending trend, reaching 3.39 lei / kg. In 2016, it is easy to see that the lowest price of the analyzed period was registered. The price for peaches in 2016 decreased by 19.3% compared to 2012. This year saw the highest price drop for peaches compared to 2012. Year 2017, there is a slight increase compared to 2016, the price reaching to 3.57 lei / kg. In 2017, the price for peaches was 5.3% compared to 2016, but declined by 19.3% compared to 2012.

The annual average consumption per capita of peaches and nectarines in Romania ranged from 3.1 to 6.6 kg. This consumption varied from year to year (see Fig.2.). From the data presented, it can be very well observed that, starting with 2014, the average annual

consumption of peaches and nectarines has been rising.

This is due to a number of factors such as the substantial content in vitamins and minerals necessary for the good functioning of the human body; increasing information on the role of fruit consumption by the population; easy access to peaches and nectarines over a longer period of time because sufficient quantities are imported; changing the pattern of consumption for some of the population; and so on.

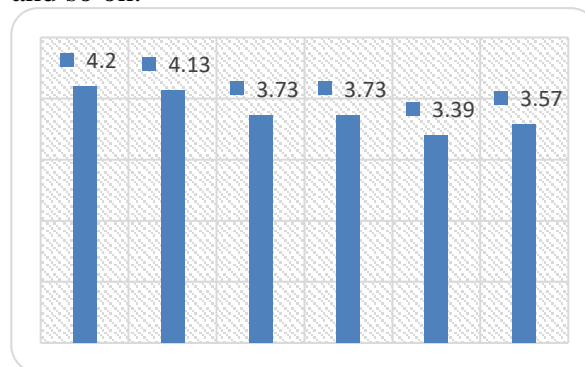


Fig. 1. Peach average price, period 2012-2017

Source:

Own design based on NIS Tempo-online database 2019 [11]

In 2017, the average annual consumption of peaches and nectarines increased by 94.1% compared to 2012. This increase in

consumption of peaches and nectarines in 2017 is partly related to the factors mentioned above and on the other hand because price is with 19.0% lower than in 2012. According to the data provided by the National Institute of Statistics, in 2016, human consumption of peaches and nectarines in Romania was 122 thousand tons, and the degree of self-supply was 19.7% [10].

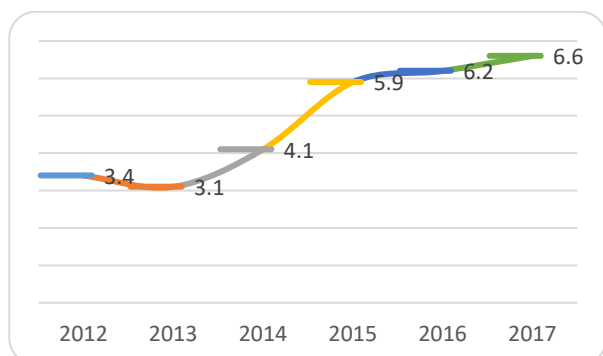


Fig. 2. Dynamics of the annual average consumption per inhabitant of peaches and nectarines in Romania, 2012-2017 (kg / inhabitant)

Source: Own design based on NIS Tempo-online database 2019 [11]



Photo 7. Peaches for consumption
Source: [1]



Photo 8. Nectarines for consumption
Source: [12]

In the period 2012-2016 Romania imported peaches and nectarines from different countries of the world. The imported quantity of peaches and nectarines varied. The smallest imports were registered in 2013 (26,218 tonnes) and the largest imports were registered in 2015 (45,417 tonnes) (see Fig.3.).

In 2015, quantitative imports of peaches and nectarines increased by 19.4% compared to 2012. In 2016, a slight decrease in the quantity of peaches and nectarines was observed compared to 2015, reaching 45,403 tonnes. Although imports of peaches and nectarines are declining in 2016, compared to 2015, imports remain high compared to 2013. These imports increased in 2016 by 73.1% compared to 2013.

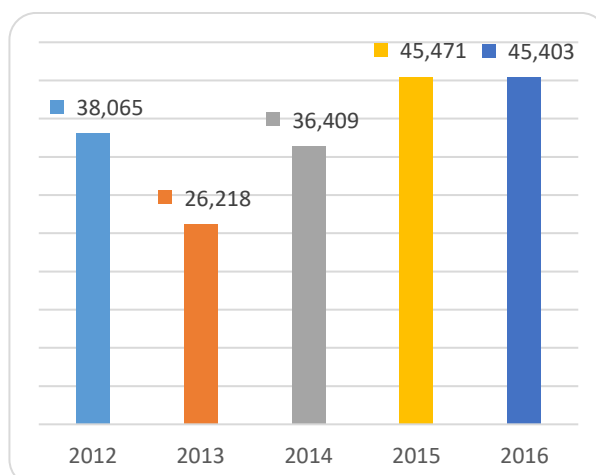


Fig. 3. Dynamics of Romania's quantitative imports of peaches and nectarines in 2012-2016 (tonnes)

Source: [8]

The value of imports for peaches and nectarines has fluctuated. The lowest import value was recorded in 2013 (\$ 18,934 thousand) (see Fig.4.). This low import value is closely correlated with the amount of peaches and nectarines that was imported in 2013. In 2016, the highest import value was recorded, of 31.223 thousand dollars. It can be seen that in 2016 the value of imports for peaches and nectarines increased by 60.2% compared to 2012 and by 64.9% compared to 2013.

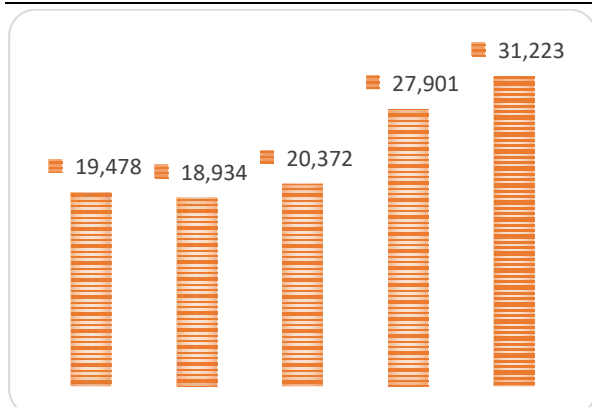


Fig.4. Import value for peaches and nectarines in Romania, 2012-2016 (thousands of dollars)
 Source: [8]

As regards Romania's quantitative exports of peaches and nectarines from the data provided by FAOSTAT, their massive decline during the analyzed period is noticeable. The highest quantities of peach and nectarine exports were made in 2012 (2,046 tonnes) (see Fig.5.). Also, the lowest exports were only 10 tonnes (2015). From the data regarding the imports and exports of Romanian peaches and nectarines for the period 2012-2016, it is noticed that the imports are ahead of the exports. This has a negative impact on the results obtained both at farm level and at macroeconomic one.

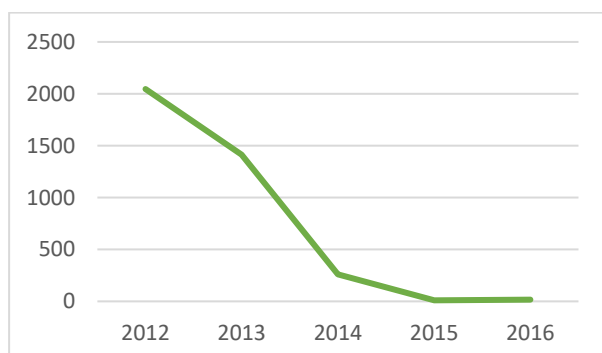


Fig.5. Dynamics of quantitative exports for peaches and nectarines in 2012-2016 (tonnes)
 Source: [8]

According to the central data by FAOSTAT, the value of exports for peaches and nectarines in the period 2012-2016 shows that it has been substantially reduced since 2014. The highest export value was registered in 2012 (\$ 1,420 thousand, and the smallest was \$ 11 thousand (2015) (see Fig.6.). The value of exports of peaches and nectarines recorded

by Romania is directly related to the quantity of peaches and nectarines exported during the analyzed period.

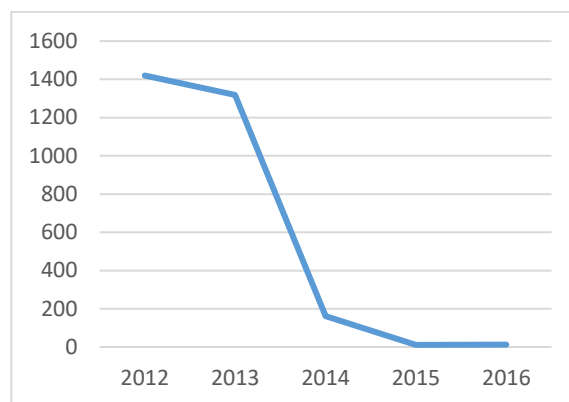


Fig. 6. Export value for peaches and nectarines,
 Source: [8]

Regarding the value of the imports and exports for peaches and nectarines, during the period 2012-2016, it results that there was an obvious deficit of Romania in the international trade in this fruit category.

CONCLUSIONS

This paper studied the changes and trends related to the production and marketing of peaches and nectarines in Romania. The statistical data that led to the analysis carried out in the paper were consulted by the National Institute of Statistics, as well as by various specialized international materials. The research was conducted for the period 2012-2017 and a number of indicators were analysed. The indicators studied were production, average price, imported and exported quantities, consumption availability, consumption per capita, value of imports and exports. It was found that most of the peaches and nectarines obtained in Romania are destined for domestic consumption and only a small the quantity is for export. Peaches production was varied annually, the most significant being recorded in 2014 (23,764 tonnes) and the lowest was achieved in 2012 (16,838 tonnes). Also, in 2017, peach production increased by 10.14% compared to 2012, but declined by 21.94% compared to 2014. The production of nectarines was varied, with the highest production being

achieved in the year 2014 (949 tonnes). In 2017, nectarine production increased by 34.57% over the reference year 2012. The annual average consumption per capita of peaches and nectarines in Romania ranged from 3.1 to 6.6 kg. This consumption varied from year to year. From the data presented, it can be very well observed that, starting with 2014, the average annual consumption of peaches and nectarines has been rising. This was due to a number of factors such as the substantial content in vitamins and minerals, easy access to peaches and nectarines over a longer period of time because sufficient quantities are imported; changing the pattern of consumption for some of the population. As regards Romania's quantitative exports of peaches and nectarines, a decline during the analyzed period was noticeable. The highest quantities of peaches and nectarines exports were made in 2012 (2,046 tonnes). Also, the lowest exports were only 10 tonnes (2015). From the data regarding the imports and exports of Romanian peaches and nectarines for the period 2012-2016, it is noticed that the imports are ahead of the exports. This has a negative impact on the results obtained both at farm level and at macroeconomic one. In economic terms, the export of peaches and nectarines increased and the import decreased this means a deficit in the international trade in this fruit category.

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