

Evolution of fruit growing sector in Romania

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Abstract This article aims to present the evolution of the fruit growing sector in Romania in the period 1990-2018. The research methodology used consisted in the analysis and interpretation of data collected from official sites and publications and from the literature. In Romania, fruit species can be successfully cultivated throughout the territory, except for the alpine area and part of the coniferous area. Following the research, it was found that over the last decades, in Romania, the area occupied by fruit species has decreased by over 38%, and over 70% of existing fruit plantations are aged, older than 25 years. Given the current situation of the fruit growing sector in Romania, the authors of the article consider that measures are needed to lead both to the replacement of aged fruit plantations and to increase the fruit area.

Key words

fruit sector in Romania, evolution, fruit area, fruit production

Romania is located in the northern hemisphere, at 45 ° North latitude and 25 ° East longitude. The fact that our country is located at the border between the Mediterranean and the temperate climates makes possible the cultivation of many fruit species (apple, pear, plum, apricot, peach, cherry, walnut, hazelnut, chestnut, almond, fruit bushes, strawberry, etc.), including some subtropical species (fig, persimmon, and kiwi). Practically, in our country, fruit trees are successfully cultivated on the entire territory, except for the alpine area and a part of the coniferous area [1, 4, 5, 6].

Material and Method

In order to carry out this article, we used as a research method the analysis and interpretation of data collected from official statistical sites such as the Food and Agriculture Organization of the United Nations, the National Institute of Statistics, and data from studies and articles in the literature.

Results and Discussions

The orchard areas occupy in Romania an area of 100957 km², of which over 84.7% are in the rural area. In 2014, the 196941 hectares with orchards and fruit nurseries, existing in 1341 localities, represented approximately 1.4% of the agricultural area used [8].

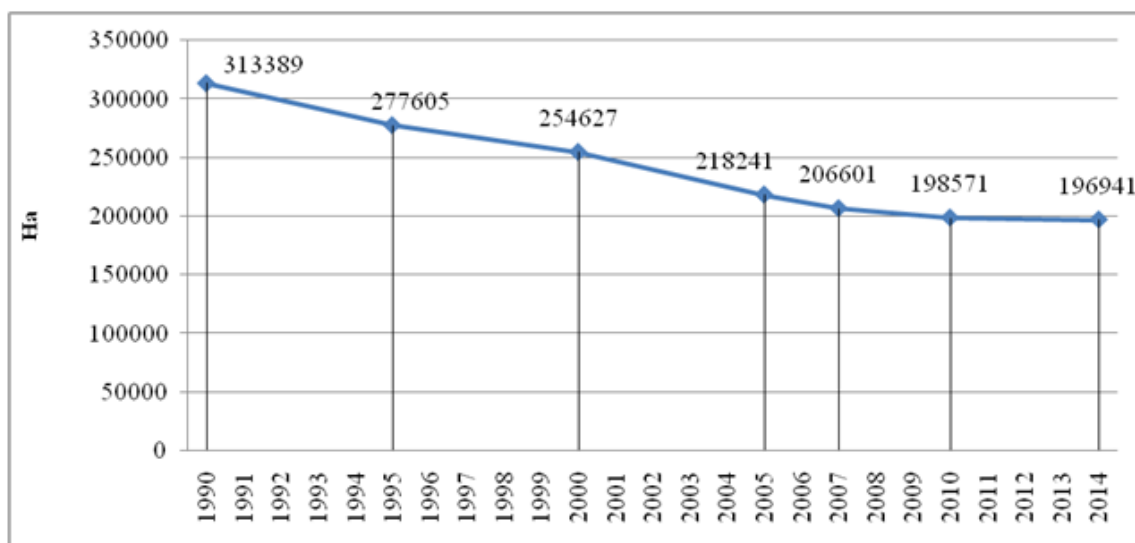


Fig. 1. Evolution of areas with orchards and fruit nurseries in Romania 1990-2014

Source: INSSE 2020 – processed data [9]

It is noteworthy that after 1990 the area occupied by orchards and nurseries, which was 313 thousand hectares, decreased at a very fast rate until 2007 when it registered less by 106788 hectares (-34%). After 2007, with the integration into the EU, the rate of reduction of areas cultivated with fruit species was not so drastic, decreasing in seven years with only 9660 hectares (2014).

In 2014, over 70% of the orchards were aged, older than 25 years, with low productive potential, declining

or abandoned. Only 7% of the total area was young plantations. Orchards on fruit occupied 67110 hectares representing 42% of the total area. Depending on the cultivation system, there is a very high percentage (68%) owned by classical plantations, 30% intensive plantations and only 2% superintensive plantations. Regarding the area of organic fruit farms, it increased from 211 hectares in 2006 to 6 083 hectares in 2012, of which about 86% were in conversion and only 14% certified [2, 8].

Table 1

Evolution of cultivated areas with the main fruit species 1990-2018 (hectares)

| FRUIT SPECIES | 1990 | 1995 | 2000 | 2005 | 2007 | 2010 | 2014 | 2018 | ± compared to 1990 | |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|---------------|
| Plum tree | 90000 | 102280 | 95661 | 93866 | 76225 | 69288 | 66552 | 65910 | -24090 | |
| Apple tree | 84864 | 85625 | 71016 | 81672 | 59017 | 56373 | 56130 | 53939 | -30925 | |
| Pear tree | 9800 | 7549 | 6069 | 6067 | 4619 | 5096 | 3463 | 3102 | -6698 | |
| Peach tree and nectarine tree | 7200 | 6388 | 3590 | 2689 | 1785 | 1964 | 1797 | 1699 | -5501 | |
| Cherry tree | 17400 | 13375 | 10446 | 8702 | 7688 | 6930 | 6446 | 7058 | -10342 | |
| Apricot tree | 7900 | 6464 | 4389 | 4151 | 3314 | 2618 | 2984 | 1971 | -5929 | |
| Nut tree | 2412 | 2506 | 2122 | 2063 | 2119 | 1490 | 1598 | 1591 | -821 | |
| Strawberry | 4500 | 1318 | 2000 | 2167 | 2826 | 2664 | 2422 | 3295 | -1205 | |
| Other fruit tree species | 2986 | 2857 | 1977 | 1882 | 1412 | 1321 | 1781 | 1950 | -1036 | |
| TOTAL | 227062 | 228362 | 197270 | 203259 | 159005 | 147744 | 143173 | 140515 | -86547 | -38.1% |

Source: F.A.O. 2020 – processed data [7]

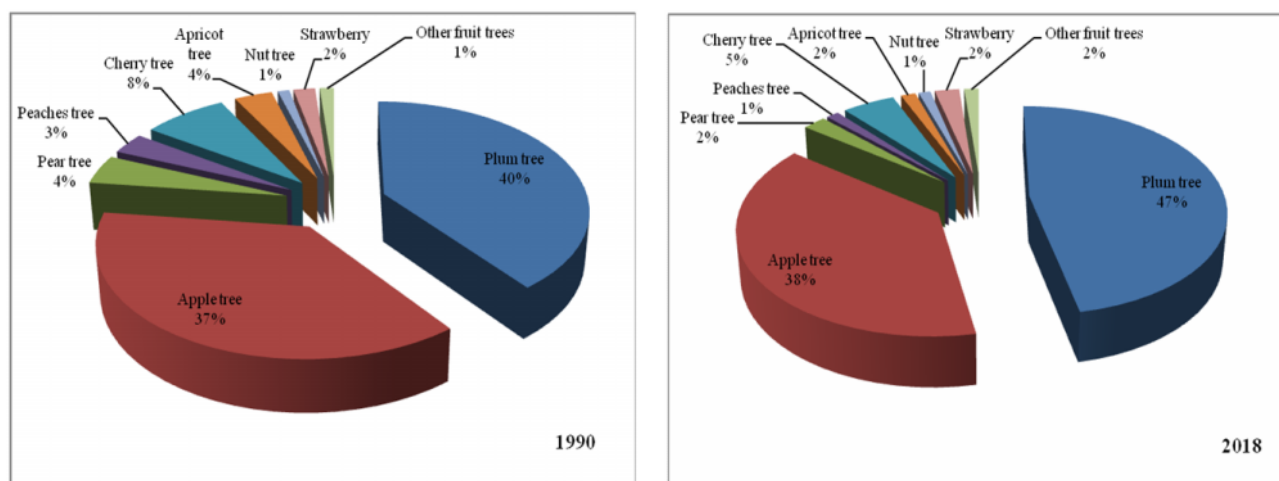


Fig. 2. The surface cultivated with the main fruit species 1980; 2018 (%)

The most widespread fruit species in Romania are the plum tree, apple tree and cherry tree, the first two occupying in 2018 over 85% of the fruit area. As can be seen in Figure 1, in 1990 the fruit species were more diversified, the cherry tree, pear tree and apricot tree

had in the share of the structure of the fruit area about 50% more than in 2018, and the two main species, the plum tree and apple tree, occupy about the same area (the apple with an extra percentage and the plum with seven percent more).

Table 2

Evolution of the number of trees in the main fruit species 1990-2018 (millions)

| FRUIT SPECIES | 1990 | 1995 | 2000 | 2005 | 2007 | 2010 | 2014 | 2016 | 2018 | ± compared to 1990 | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------------|----------------|
| Plum tree | 44.66 | 46.11 | 46.61 | 45.59 | 46.17 | 49.34 | 60.25 | 34.74 | 34.53 | -10.13 | |
| Apple tree | 49.88 | 49.53 | 44.46 | 37.68 | 31.34 | 29.96 | 26.39 | 24.79 | 28.69 | -21.19 | |
| Pear tree | 5.19 | 4.90 | 4.26 | 4.52 | 3.64 | 3.83 | 3.40 | 3.25 | 3.19 | -2.00 | |
| Peach tree | 5.88 | 4.36 | 2.90 | 1.97 | 1.58 | 1.28 | 1.14 | 1.09 | 1.14 | -4.74 | |
| Cherry and sour cherry trees | 8.89 | 8.89 | 8.00 | 7.02 | 6.19 | 6.07 | 5.58 | 5.44 | 5.32 | -3.57 | |
| Apricot and common apricot trees | 4.70 | 4.27 | 3.75 | 3.30 | 2.70 | 2.26 | 2.88 | 2.22 | 2.08 | -2.61 | |
| Nut tree | 2.07 | 1.93 | 2.28 | 2.43 | 2.79 | 1.83 | 1.83 | 1.85 | 1.92 | -0.15 | |
| Other fruit tree species | 2.96 | 2.60 | 2.34 | 1.87 | 1.94 | 2.15 | 2.11 | 1.44 | 1.45 | 1.51 | |
| TOTAL | 124.23 | 122.59 | 114.60 | 104.37 | 96.35 | 96.72 | 103.58 | 74.82 | 78.32 | -45.91 | -36.96% |

Source: INSSE 2020 – processed data

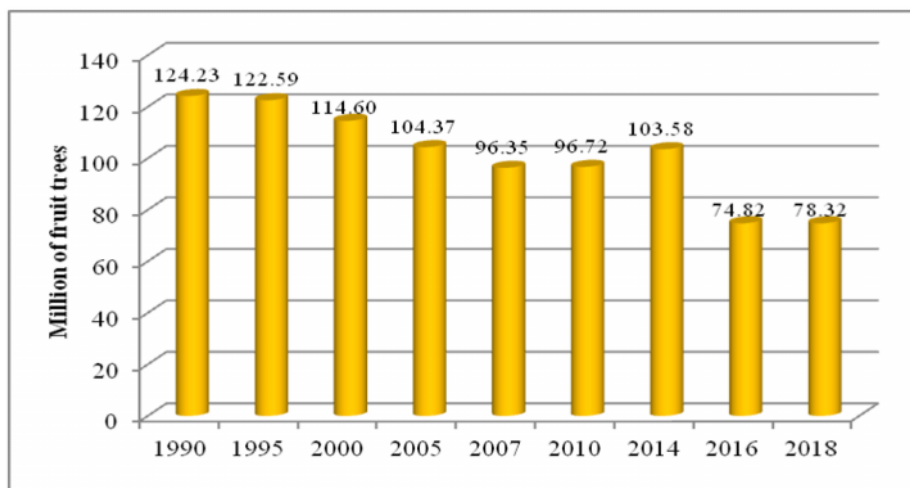


Fig. 3. Evolution of the number of fruit trees 1990-2018

If we compare the data from 2018 with the data from 1990, regarding the orchard area (Table 1) and the number of trees (Table 2), we find that both the orchard

area and the number of fruit trees decreased, which indicates a low degree of crop intensification.

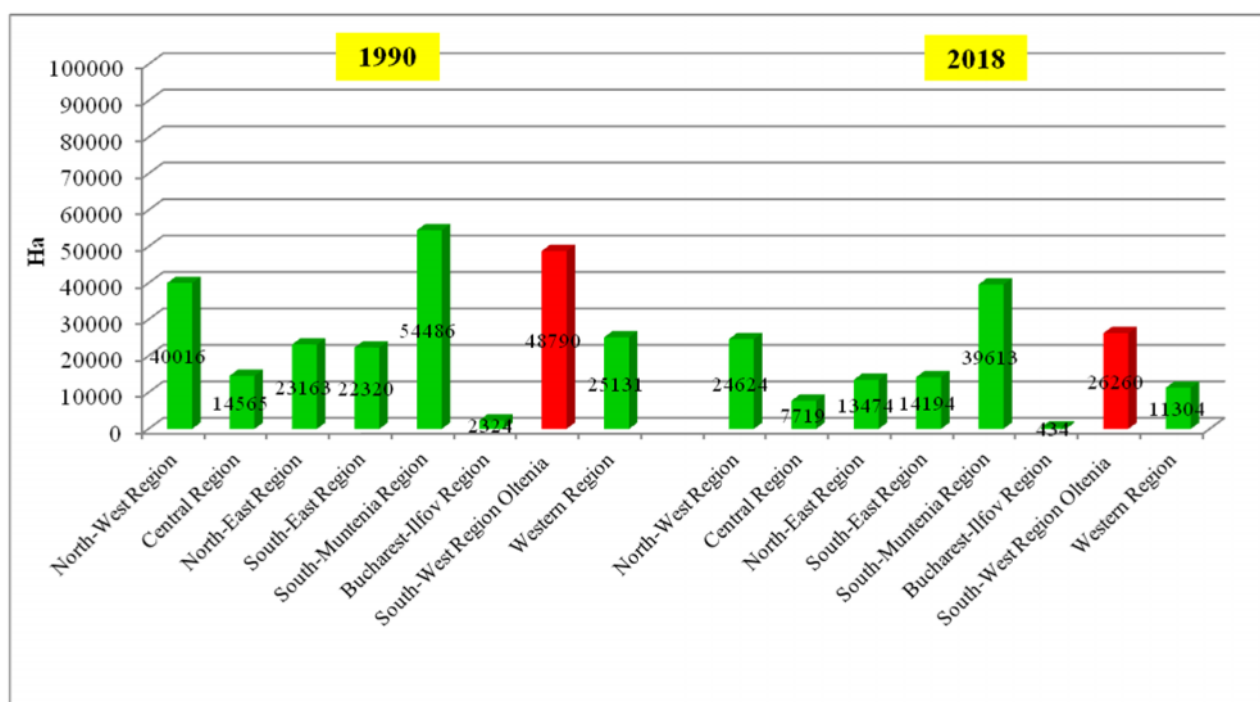


Fig. 4. Area of production orchards in the development regions of Romania (1990-2018)

Source: INSSE 2020 – processed data

In 2018 among the eight development regions of Romania, the largest orchard area was held by the South-Muntenia Region (39613 ha), followed by the South-West Oltenia Region (26260 ha), the North-West Region (24624 ha), South-East Region (14194 ha), North-East Region (13474 ha), West Region

(11304 ha), Center Region (7719 ha) and Bucharest-Ilfov Region (434 ha). Compared to 1990, the highest losses were registered in the South West Oltenia Region where the area with orchards on fruit decreased by 2018 with 22530 hectares (-46.18%) [3].

Table 3

Evolution of fruit production 1990-2018 (tons)

| FRUITS | 1990 | 1995 | 2000 | 2005 | 2007 | 2010 | 2014 | 2016 | 2017 | 2018 | ±compared to 1990 |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| Plums | 449518 | 252495 | 549627 | 622357 | 372631 | 624884 | 495287 | 512975 | 444922 | 842132 | +392614 |
| Apples | 683152 | 457203 | 490260 | 637979 | 475370 | 552860 | 513195 | 467259 | 348656 | 643856 | -39296 |
| Pears | 73800 | 63046 | 70632 | 88890 | 62852 | 60375 | 61292 | 52751 | 48878 | 60440 | -13360 |
| Peaches | 52944 | 13402 | 18347 | 29104 | 16850 | 10856 | 23764 | 22869 | 18546 | 22199 | -30745 |
| Cherries and sour cherries | 67680 | 60500 | 73739 | 117859 | 65163 | 70290 | 82808 | 73834 | 58474 | 90837 | -9206 |
| Apricots and common apricots | 47957 | 15264 | 28391 | 52410 | 27566 | 23804 | 43609 | 30726 | 33851 | 35704 | -12253 |
| Walnuts | 26031 | 22773 | 31503 | 47810 | 25516 | 34359 | 31514 | 34095 | 45797 | 56053 | +30022 |
| Strawberries | 18195 | 12737 | 11660 | 18158 | 16496 | 21434 | 21935 | 23000 | 27050 | 26164 | +7969 |
| Other fruits | 31179 | 19104 | 26881 | 31757 | 23312 | 20756 | 28024 | 24077 | 32320 | 36035 | +4856 |
| TOTAL (million t) | 1.45 | 0.92 | 1.30 | 1.65 | 1.09 | 1.42 | 1.30 | 1.24 | 1.06 | 1.81 | +24.83% |

Source: INSSE 2020 – processed data

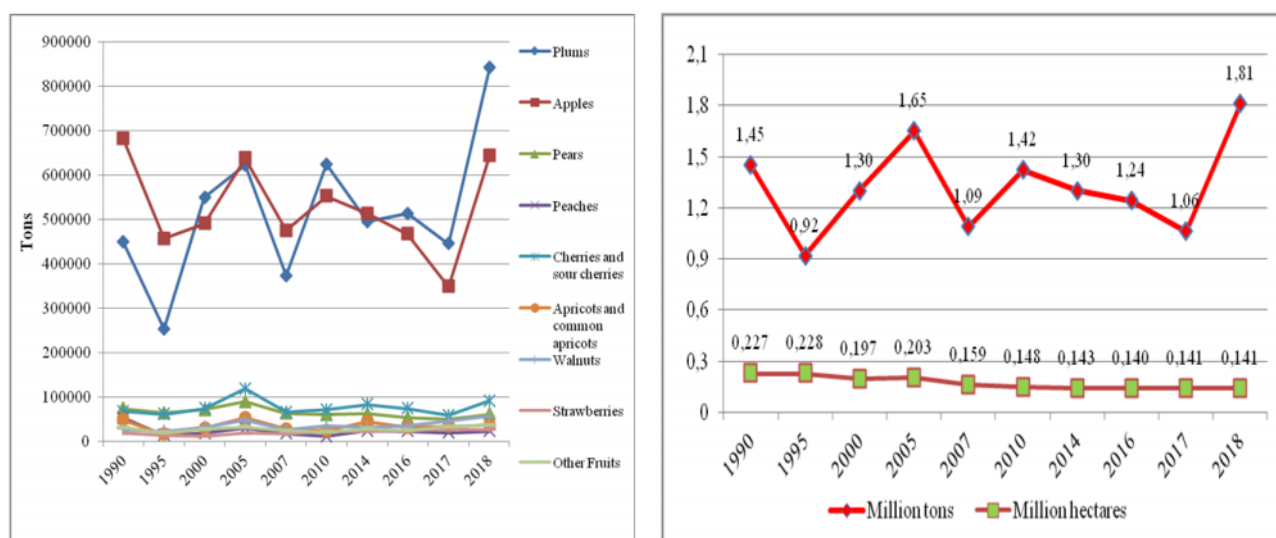


Fig. 5. Evolution of fruit production 1990-2018

As can be seen in Figure 5, the fruit production in Romania fluctuates quite a lot, this fluctuation being caused mainly by climatic conditions and secondarily by the evolution of the fruit area. In 2018, at an orchard area of 140515 ha, by 38.1% lower than in 1990, was obtained a production with 24.83% higher, and in 2017 at an orchard area of 141182 ha, by 37.8% lower than in 1990, a 27% lower production was obtained. Of the total fruit production of 1.81 million tons in 2018, over 82% was provided by plum trees and apple trees.

Conclusions

In the last decades, the fruit sector in Romania has been in a continuous decline. Compared to 1990, the orchard area decreased by over 38% (-86547 hectares), and the trend will most likely continue to be negative given that most existing plantations are over 25 years old and the rate at which young plantations are established is quite low.

The orchard area decreased in all development regions of Romania, the largest losses were registered in the South-West Oltenia Region where the area with

orchards on fruit decreased in the period 1990-2018 by 22530 hectares (-46.18%).

Compared to 1990, there is a lower diversification of fruit species, currently over 85% of the fruit area is occupied by plum trees and apple trees.

Considering the current situation of the fruit sector in Romania, we consider that measures are needed to lead both to the replacement of aged fruit plantations and to the increase of the total fruit area. There is also a need for better diversification of the assortment of fruit species.

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[9] [***www.statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table](http://www.statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table)