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FRUIT GROWING IN THE SOUTH-WEST OLTENIA REGION IN THE NATIONAL CONTEXT (2016-2022)

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Abstract

The paper aims to anchor the fruit-growing heritage of the South-West Oltenia Development Region within the context of national realities. Thus, for the period 2016-2022, information is presented regarding the number of existing trees, total fruit production (tons), and average production per tree (kg). The general situation of the sector is addressed based on information related to the following species: plum, apple, pear, peach, nectarine, cherry, sour cherry, apricot, and other fruit trees – for the number of trees and average production per tree. Additionally, for these species, information on total production also includes strawberries and fruits from family gardens. This analysis is based on the main statistical database provided by the National Institute of Statistics. In terms of tree count, the region accounted for 18.03% of the national total, representing 13,501,467 trees. The variation ranges from 6.20% for nectarines (2,594 trees) to 34.66% for other fruit trees (469,931 trees).In the context of total national fruit production, the region accounted for 18.35% (277,886.57 out of 1,514,463.43 tons), with extreme shares of 6.59% for peaches (1,162.71 tons at the regional level compared to 17,633.86 tons at the national level) and 27.03% for other fruits (8,550.56 compared to 31,631.29 tons). The average production per tree (21 kg) places the region 5% above the national level (20 kg). There is a need for a significant revival of the fruit-growing sector, particularly through species that align with the agro-productive characteristics of the region, given adequate support from the authorized governmental bodies.

Key words**:** *plum, apple, pear, peach, total production, average production*

INTRODUCTION

Fruits have been one of the primary foods used in human nutrition. They can generally be consumed in their natural state, without additional energy consumption for preparation or processing [2].

The earliest written evidence of fruit tree cultivation dates back to the era of the Old Egyptian Kingdom (3000-2400 BC) with "orchards where the olive tree occupied a central place". The Hindu poem 'Ramayana' also mentions fruit trees cultivated in India.

Together with cereals and vegetables, fruits are important elements of human nutrition, as they generate a healthy diet due to their appreciable and varied content of bioactive substances [8, 12].

Fruits are used in nutrition mainly as desserts or between meals, fresh or prepared in various forms: baked (apples, pears), food made from fresh or dried fruits, salad, marmalade, jams, purees, compotes, soft drinks or alcoholic beverages, and for seasoning other dishes [5].

Fruits obtained through traditional technologies are characterized by superior quality compared to those produced through intensive or super-intensive technologies, and therefore they should be preferentially introduced into the consumption structure [3, 10].

Contemporary socio-economic shifts influence the consumption structure of the population and, consequently, the consumption of fruits [13].

The use of fruits in nutrition is influenced by their quality, which is affected by a multitude of factors that can manifest throughout the entire value chain [4].

The importance of fruit production is also highlighted by the fact that after 2015, at the national level, there has been a noticeable change in the structure of the dietary ration, with the increased use of fruits [11].

Older, indigenous varieties are better adapted to local climatic conditions and exhibit high tolerance to environmental factors. However, currently, their fruits may be considered qualitatively outdated by market demands. Nevertheless, it can be stated that some traditional varieties are still successfully cultivated today: Tuleu gras, Gras românesc, Vânătromânesc - for plums; Boambe de Cotnari, Pietroasenegre de Cisnădie - for cherries; Crișana and Mocănești - for sour cherries; Pătul and Crețesc - for apples, etc. [1].
Even though Romania has a tradition in fruit growing, currently, due to the way orchards are exploited and the aging of the fruit-growing heritage, meeting the internal consumption needs is achieved through significant import operations, which clearly exceed export operations (amid declining production), an aspect with various consequences for fruit producers and consumers [6, 14].
The strategy for developing fruit growing in Romania must be based on the most modern scientific, financial, technological, and organizational foundations for the sector to enter the competitive international market. This strategy should naturally follow the evolutionary course of modern global fruit growing. The current climate changes necessitate research for the acclimatization and introduction, as much as possible, of new species into cultivation, such as: persimmon, kiwi, pomegranate, jojoba, goji, goumi, etc.
More than this, the higher demand of fruits in human ration has intensified the trade with fruits at the international level [9].
South West Romania is well known for its fruit trees plantations and also vineyards [7].
In this context, the purpose of this paper is to present the fruit-growing heritage of the South-West Oltenia Development Region of Romania in terms of the number of existing trees, total fruit production (tons), and average production per tree in their evolution in the period 2016-2022.

MATERIALS AND METHODS

The realization of the work involves the use of three indicators: the number of fruit trees, total fruit production (t), and average production per tree (kg). The analysis was conducted over a seven-year period (2016-2022), for which an average of the period was also determined. At this level, the existing national and regional data were used to determine the structure of the number of trees, the total production (by species), and in the case of the average production, to position the species comparatively with the general level of the indicator. Additionally, for the average of the period, the positions of the South-West Oltenia Development Region were established in the national context (shares or positions compared to the national situation). Information regarding the number of trees and average production is provided both at the general level and for specific species, including plum, apple, pear, peach, nectarine, cherry, sour cherry, apricot, walnut, and other trees or fruits.In the case of total production, in addition to this information, data on strawberries and fruits obtained in family gardens are also included [8]. In the category of other trees or other fruits, the following can be included: quince, hazelnut, fig, edible chestnut, almond.

RESULTS AND DISCUSSIONS

Table 1 presents the data regarding the number of trees, at the general sector level as well as for the cultivated species, both for Romania and for the South-West Oltenia Region.
At the national level, the total number of trees varied from 73,149,036 in 2019 to 78,325,345 in 2018, showing an uneven evolution of the indicator, while at the regional level we are discussing extreme levels of 13,204,185 and 14,028,994 trees in the years 2019 and 2020 respectively, maintaining the fluctuating trend of the indicator's evolution over time.
The total number of plum trees ranged between 34,195,891 and 34,743,975 trees for the years 2021 and 2016, noting that the level specific to the first term of the dynamic series was not reached by any other term, considering the evolution of the indicator to be a descending fluctuating one. Regarding the specific regional situation, extreme levels of the number of plum trees were observed at 8,548,829 and 8,799,614 trees in 2022 and 2016 respectively, with the descending

fluctuating trend present at the national level also evident in this case.

For the apple species, variations in the number of trees ranged from 23,655,918 to 28,689,430 in the years 2019 and 2018 respectively, with the indicator's evolution being uneven.

In the case of the South-West Oltenia Region, we discuss extreme levels of 2,092,594 and 2,639,755 trees for the years 2019 and 2020 respectively, with the indicator's evolution being a fluctuating one.

Table 1.Number of fruit trees

Specification		Year							Period average**		
		2016*	2017*	2018*	2019*	2020*	2021*	2022*	Effective	Structure by species (%)	Share of the region at the national level (%)
Total**	N	74,820,882	74,814,990	78,325,345	73,149,036	73,487,088	74,512,910	7,494,1013	74,864,467	100	-
	R	13,481,924	13,390,970	13,406,226	13,204,185	14,028,994	13,664,237	13,333,737	13,501,467	100	18.03
Plums	N	34,743,975	34,591,325	34,534,473	34,459,654	34,214,693	34,195,891	34,210,196	34,421,458	45.98	-
	R	8,799,614	8,749,198	8,686,388	8,645,560	8,723,902	8,676,487	8,548,829	8,689,997	64.35	25.25
Apples	N	24,787,332	25,304,145	28,689,430	23,655,918	24,014,734	24,950,006	24,931,036	25,190,372	33.65	-
	R	2,163,069	2,143,438	2,142,714	2,092,594	2,639,755	2,450,292	2,318,978	2,278,691	16.88	9.05
Pears	N	3,251,246	3,153,616	3,192,913	3,147,062	3,313,645	3,331,620	3,247,171	3,233,896	4.32	-
	R	409,062	407,593	406,837	413,934	615,972	489,208	403,846	449,493	3.33	13.90
Peaches	N	1,092,259	1,075,956	1,135,512	1,184,277	1,095,561	1,142,911	1,094,746	1,117,317	1.49	-
	R	68,617	64,802	95,730	97,870	69,376	72,058	75,546	77,714	0.58	6.96
Nectarines	N	37,962	45,972	28,797	39,944	52,855	55,586	31,797	41,845	0.06	-
	R	3,086	3,892	2,745	2,641	2,636	1,593	1,563	2,594	0.02	6.20
Cherries and sour cherries	N	5,438,277	5,346,627	5323535	5,333,720	5,404,675	5,354,406	5,500,738	5,385,997	7.19	-
	R	783,871	776,157	800,469	801,727	809,597	800,146	802,137	796,301	5.90	14.78
Apricot	N	2,218,092	2,091,530	2,076,955	2,098,513	2,080,913	2,094,294	2,177,181	2,119,640	2.83	-
	R	474,636	470,133	468,529	448,838	450,940	448,979	452,408	459,209	3.40	21.66
Nuts	N	1,845,824	1,842,007	1,918,156	1,936,247	2,006,104	2,088,057	2,351,612	1,998,287	2.67	-
	R	272,285	269,854	295,171	272,054	272,909	279,551	280,938	277,537	2.06	13.89
Other trees	N	1,405,915	1,363,812	1,425,574	1,293,701	1,303,908	1,300,139	1,396,536	1,355,655	1.81	-
	R	507,684	505,903	507,643	428,967	443,907	445,923	449,492	469,931	3.48	34.66

Source: NIS, Tempo online data base, *http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table,AGR114A-The number of fruit trees, by forms of ownership, macro-regions, development regions and counties, Accessed on 12.06.2024 [8].

** own calculation;N – national level;R – regional level.

For pear trees, at the national level, the limits were 3,147,062 and 3,331,620 trees for the years 2019 and 2021 respectively, with the fluctuating evolution of the indicator being certain. At the regional level, the extreme years were 2018 and 2020 (406,837 and 615,972 trees respectively), with an uneven evolution.

Regarding peach trees, at the national level, extreme values of 1,075,956 and 1,184,277 trees were observed for the years 2017 and 2019, with the species showing a variable evolution over the analyzed period. The South-West Oltenia Region recorded limits of 64,802 and 97,870 trees in the same extreme years mentioned at the national level (2017 and 2019), with a similar dynamic as previously mentioned.

The total number of nectarine trees ranged between 28,797 and 55,586 trees for the years 2018 and 2021, with the indicator's evolution being a fluctuating one. Regarding the specific regional situation, extreme levels of nectarine trees were observed at 1,563 and 3,892 trees in 2022 and 2017 respectively, with a clear descending trend.

For cherry and sour cherry trees, variations in the number of trees ranged from 5,323,535 to 5,500,738 in the years 2018 and 2022 respectively, with the indicator's evolution being uneven and showing signs of recovery towards the end of the period. In the South-West Oltenia Region, we discuss extreme levels of 776,157 and 809,597 trees for the years 2017 and 2020 respectively, with the indicator's evolution being a fluctuating one.

Regarding apricot and myrobalan (cherry plum) trees, at the national level, extreme values of 2,076,955 and 2,218,092 trees were observed for the years 2018 and 2016 respectively, with the species showing a variable evolution over the analyzed period. The first term of the dynamic series was not

equaled by any other component. The South-West Oltenia Region recorded limits of 448,838 and 474,636 trees in the years 2019 and 2016 respectively, with a dynamic similar to that mentioned previously.

For walnut trees, at the national level, the limits were 1,842,007 and 2,351,612 trees for the years 2017 and 2022 respectively, with the indicator's evolution marked by a decrease in 2017 compared to 2016, followed by a clearly ascending trend. At the regional level, the extreme years were 2017 and 2018 (269,854 and 295,171 trees respectively), with an evolution different from that mentioned at the national level (variable).

For other trees, the total number ranged between 1,293,701 and 1,425,574 trees for the years 2019 and 2018, with the indicator's evolution considered to be fluctuating. Regarding the specific regional situation, extreme levels of 428,967 and 507,684 trees were observed in 2019 and 2016 respectively, with the trend noted at the national level also being specific in this case.

At the national level, the average for the period was 74,864,467 trees, with the following species structure: 45.98% plums (34,421,458 trees), 33.65% apples (25,190,372 trees), 7.19% cherries and sour cherries (5,385,997 trees), 4.32% pears (3,233,896 trees), 2.83% apricots and cherry plums (2,119,640 trees), 2.67% walnuts (1,998,287 trees), 1.81% other trees (1,355,655 trees), 1.49% peaches (1,117,317 trees), 0.06% nectarines (41,845 trees).

Regarding the specific situation of the South-West Oltenia Region, an average of 13,501,467 trees was noted, with the following species structure: 0.02% nectarines (2,594 trees), 0.58% peaches (77,714 trees), 2.06% walnuts (277,537 trees), 3.33% pears (449,493 trees), 3.40% apricots and cherry plums (459,209 trees), 3.48% other trees (469,931 trees), 5.90% cherries and sour cherries (796,301 trees), 16.88% apples (2,278,691 trees), 64.35% plums (8,689,997 trees).

Figure 1 shows the share of the South-West Oltenia Region at the national level in terms of the number of fruit trees. Overall, the region accounted for 18.03% of the total number of trees, a proportion that is exceeded in the case of plums (25.25%), apricots and cherry plums (21.66%), and other trees (34.66%), while for the remaining species, the proportion is lower (6.20% for nectarines, 6.96% for peaches, 9.05% for apples, 13.89% for walnuts, 13.90% for pears, 14.78% for cherries and sour cherries).

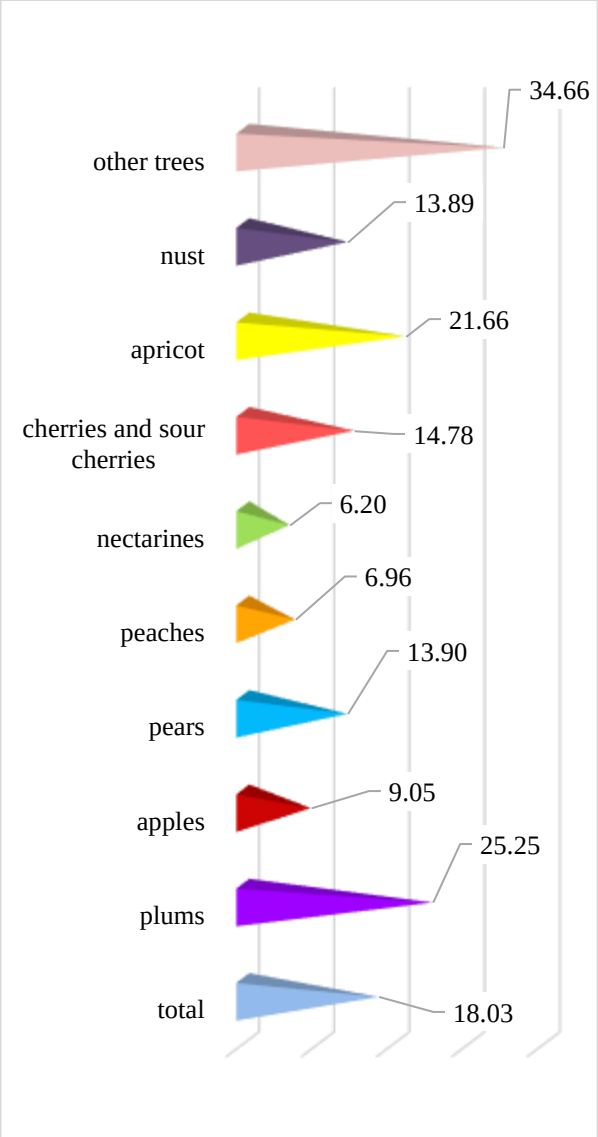

Fig.1. The share of the South-West Oltenia Region at the national level, within the total number of fruit trees - Period average (%)
Source: own calculation.

Table 2 contains data related to the total fruit production (in tones), both overall and broken down by specific fruit species. In addition to the previous indicators, it includes information regarding the production of strawberries and fruits obtained from family gardens.

Table 2. Total production of fruits (t)

Specification		Year							Period average**		
		2016*	2017*	2018*	2019*	2020*	2021*	2022*	Effective	Structure by species (%)	Share of the region at the national level (%)
Total**	N	1,273,354	1,088,312	1,846,170	1,519,654	1,622,449	1,737,000	1514,305	1,514,463.43	100	-
	R	216,180	206,018	315,220	283,361	325,524	335,678	263,225	277,886.57	100	18.35
Plums	N	512,975	444,922	842,132	704,817	769,874	819,358	677,021	681,585.57	45.01	-
	R	128,460	120,961	187,757	171,242	197,362	205,343	158,236	167,051.57	60.12	24.51
Apples	N	467,259	348,656	643,856	501,515	546,118	602,630	551,923	523,136.72	34.54	-
	R	43,814	38,454	68,411	58,110	74,437	76,112	57,491	59,547.00	21.43	11.38
Pears	N	52,751	48,878	60,440	49,268	49,657	52,592	45,230	51,259.43	3.38	-
	R	6,626	7,002	8,071	6,963	8,057	7,990	6,505	7,316.29	2.63	14.27
Peaches	N	22,869	18,546	22,199	17,634	15,894	14,015	12,280	17,633.86	1.16	-
	R	1,715	1,091	1,266	1,125	989	1,055	898	1,162.71	0.42	6.59
Nectarines	N	778	794	434	461	474	608	547	585.14	0.04	-
	R	48	75	35	32	33	29	22	39.14	0.01	6.69
Cherries and sour cherries	N	73,834	58,474	90,837	77,168	74,737	78,590	66,577	7,4316.71	4.91	-
	R	10,984	8,622	14,401	13,061	12,576	12,747	10,692	11,869.00	4.27	15.97
Apricot	N	30,726	33,851	35,704	30,651	27,966	28,106	24,641	30,235.00	2.00	-
	R	6,120	7,576	8,685	7,729	7,279	7,476	6,244	7,301.29	2.63	24.15
Nuts	N	34,095	45,797	56,053	51,602	50,342	56,296	55,332	49,931.00	3.30	-
	R	5,054	6,515	8,072	7,396	7,085	7,240	6,855	6,888.14	2.48	13.80
Strawberries	N	23,000	27,050	26,164	22,711	23,053	18,544	17,662	22,597.71	1.49	-
	R	2,582	2,845	2,772	2,538	2,488	2,164	1,989	2,482.57	0.89	10.99
Other fruits	N	23,299	31,526	35,601	31,623	32,680	33,811	32,879	31,631.29	2.09	-
	R	5,956	8,255	9,540	8,980	9,084	9,468	8,573	8,550.86	3.08	27.03
Fruits from family gardens	N	31,768	29,818	32,750	32,204	31,654	32,450	30,213	31,551.00	2.08	-
	R	4,821	4,622	6,210	6,185	6,134	6,054	5,720	5,678.00	2.04	18.0

Source: NIS, Tempo online data base, *http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table,AGR115A-Fruit production by tree species, ownership forms, macro-regions, development regions and counties(12.06.2024) [8].
**own calculation;N – national level;R – regional level.

At the national level, the total fruit production varied from 1,088,312 tons in 2017 to 1,846,170 tons in 2018, indicating an uneven evolution of the indicator. Meanwhile, at the regional level, extreme levels of 206,018 and 335,678 tons were recorded in 2017 and 2021 respectively, maintaining a fluctuating trend over time for this indicator.

The total plum production ranged from 444,922 to 842,132 tons for the years 2017 and 2018, with the indicator's evolution noted as uneven. Specifically at the regional level, extreme levels of plum production were observed at 120,961 and 205,343 tons in 2017 and 2021 respectively, reflecting the fluctuating trend seen at the national level.

For the apple species, total production varied from 348,656 to 643,856 tons for the years 2017 and 2018 respectively, with the evolution of the indicator being uneven. In the case of the South-West Oltenia Region, extreme levels were recorded at 38,454 and 76,112 tons for the years 2017 and 2021 respectively, indicating a fluctuating trend.

Regarding pears, at the national level, production limits were 48,878 and 60,440 tons for the years 2017 and 2018, respectively, with a clearly fluctuating trend in the indicator. Regionally, extreme years were 2022 and 2018 (6,505 and 8,071 tons respectively), with an uneven evolution observed.

For peaches, at the national level, extreme values were observed at 12,280 and 22,869 tons for the years 2022 and 2016, showing a variable evolution with declining trends over the analyzed period. In the South-West Oltenia Region, limits were recorded at 898 and 1,715 tons in the same extreme years (2022 and 2017), with a similar dynamic as mentioned earlier.

For nectarines, total production ranged from 434 to 794 tons for the years 2018 and 2017 respectively, with the indicator showing a fluctuating-descending trend. In the specific regional context, extreme levels of nectarine production were noted at 22 and 75 tons in 2022 and 2017 respectively, with a pronounced

descending trend observed for the analyzed period, particularly after 2018.

Regarding cherries and sour cherries, total production varied from 58,474 to 90,837 tons for the years 2017 and 2018 respectively, with the indicator's evolution being uneven. In the South-West Oltenia Region, extreme levels were observed at 8,622 and 14,401 tons for the years 2017 and 2018 respectively, with the indicator showing a fluctuating trend and decreasing tendencies after 2018.

When it comes to the production of apricots, at the national level, extreme values were noted at 24,641 and 35,704 tons for the years 2022 and 2018, indicating a variable evolution with clear declining trends after 2018 when the indicator reached its maximum level. The South-West Oltenia Region recorded limits of 6,244 and 8,685 tons in 2022 and 2018 respectively, showing a similar dynamic as mentioned earlier.

For walnuts, at the national level, production ranged from 34,095 to 56,053 tons for the years 2016 and 2018 respectively, with the indicator showing growth in 2017 and 2018 compared to 2016, followed by fluctuating tendencies. Regionally, extreme years were 2016 and 2018 (5,054 and 8,072 tons respectively), with a similar variable evolution as observed nationally.

In terms of strawberries, national total production varied from 17,662 tons in 2022 to 27,050 tons in 2017, indicating a clear downward trend after 2017 for this indicator. Regionally, limits were recorded at 1,989 and 2,845 tons (2022 and 2018 respectively), with dynamics similar to those at the national level.

For other fruits, total production ranged from 23,299 to 35,601 tons for the years 2016 and 2018, considering the evolution of the indicator as uneven. In the specific regional context, extreme levels were observed at 5,956 and 9,540 tons in 2016 and 2018 respectively, mirroring the national trend.

Family gardens contributed total fruit production, varying between 29,818 and 32,750 tons for the years 2017 and 2018, highlighting the uneven trend of the indicator. In the South-West Oltenia Region, limits were noted at 4,622 and 6,210 tons for the same years (similar to the national situation), with dynamics characterized by a definite fluctuating trend.

At national level, the average for the period was 1,514,463.43 t, with the following structure, by species: 45.01% plums (681,585.57 t), 34.54% apples (523,136.72 t), 4.91% cherries and cherries (74,316.71 t), 3.38% pears (51,259.43 t), 3.30% walnuts (49,931 t), 2.09% other fruits (31,631.29 t), 2.08% fruits from family gardens (31,551 t), 2.0% apricots and vegetables (30,235 t), 1.49% strawberries (22,597.71 t), 1.16% peaches (17,633.86 t), 0.04% nectarines (585.14 t). As for the specific situation of the South-West Oltenia Region, there is an average of 277,886.57 t, with a structure by species, as follows: 0.01% nectarines (39.14 t), 0.42% peaches (1,162.71 t), 0.89% strawberries (2,482.57 t), 2.04% fruits from family gardens (5,678 t), 2.48% walnuts (6,888.14 t), 2.63% each for pears and apricots (7,316.29 and 7,301.29 t), 3.08% other fruits (8,550.86 t), 4.27% cherries and cherries (11,869 t), 21.43% apple trees (59,547 t), 60.12% plums (167,051.57 t).

Figure 2 shows the share of the South-West Oltenia Region, at national level, in relation to total fruit production. At the general level, the region held 18.35% of the total fruit production, a share that is exceeded in the case of plums (24.51%), apricots and vegetables (24.15%) and other fruits (27.03%), while for the rest of the species the share is lower (6.59% in the case of peaches, 6.69% for nectarines, 10.99% for strawberries, 11.38% for apples, 13.80% for walnuts, 14.27% for pears, 15.97% for cherries and cherries, 18.0% for fruits from family gardens).

Table 3 presents the situation of the average production per tree, at a general level and for the defining fruit species at national and regional level.

At the national general level, the variation of the average production from 15 to 24 kg/tree in the case of 2017 and 2018 respectively is observed, highlighting a trend uneven for the indicator. For the South-West Oltenia Region, the range of variation in average production was between 15 kg per tree in 2017 and 25 kg per tree in 2021, with fluctuating trends.

For plums specifically, the limits were 13 kg per tree in 2017 and 24 kg per tree in 2021(the minimum limit in 2017, the maximum level in the case of 2018 and 2021), the evolution of the average production being variable. As for the regional situation, extreme levels of 14 and 24 kg/tree are noted in 2017 and 2021 respectively, the dynamics showing an uneven trend.

If we do not refer to the specific situation of apples, there are extreme national levels of 14 and 24 kg/tree respectively for 2017 and 2021, the evolution of the indicator being variable. For the analyzed region, the limits were reached in 2017 and 2018 (18 and 32 kg/tree, respectively), the dynamics being fluctuating, with some trends of uniformity in the period 2018-2021.

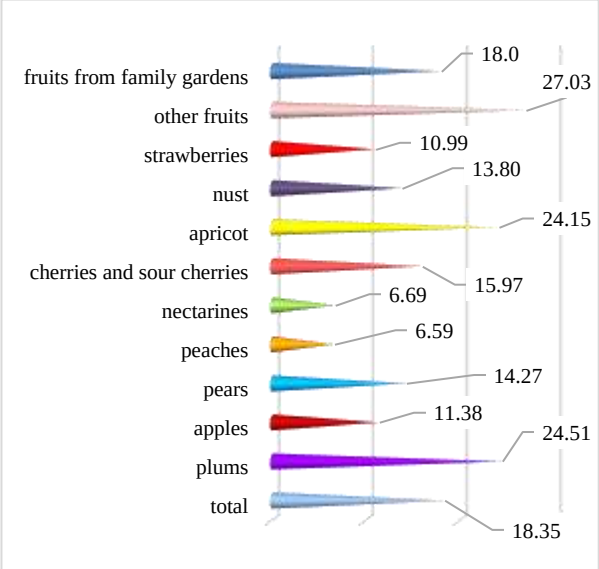

Fig.2. Share of the South-West Oltenia Region at national level, within the total production - Average of the period (%)
Source: own calculation.

Table 3.Average fruit yield (kg/tree)

Specification		Year							Period average**		
		2016*	2017*	2018*	2019*	2020*	2021*	2022*	Effective	species positioning relative to the general level (%)	Positioning of the region in relation to the national level (%)
Total**	N	17	15	24	21	22	23	20	20	100	-
	R	16	15	24	21	23	25	20	21	100	105.0
Plums	N	15	13	24	20	23	24	20	20	100.0	-
	R	15	14	22	20	23	24	19	19	90.48	95.0
Apples	N	19	14	22	21	23	24	22	21	105.0	-
	R	20	18	32	28	28	31	25	26	123.81	123.81
Pears	N	16	15	19	16	15	16	14	16	80.0	-
	R	16	17	20	17	13	16	16	16	76.19	100.0
Peaches	N	21	17	20	15	15	12	11	16	80.0	-
	R	25	17	13	11	14	15	12	15	71.43	93.75
Nectarines	N	20	17	15	12	9	11	17	14	70.0	-
	R	16	19	13	12	13	18	14	15	71.43	107.14
Cherries and sour cherries	N	14	11	17	14	14	15	12	14	70.0	-
	R	14	11	18	16	16	16	13	15	71.43	107.14
Apricot	N	14	16	17	15	13	13	11	14	70.0	-
	R	13	16	19	17	16	17	14	16	76.19	114.28
Nuts	N	18	25	29	27	25	27	24	25	125.0	-
	R	19	24	27	27	26	26	24	25	119.05	100.0
Other fruits	N	16	22	23	23	22	23	20	23	115.0	-
	R	12	16	19	21	20	20	18	18	85.71	78.26

Source: NIS Tempo online data base, *http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table, AGR116A – Average fruit production by tree species, property forms, macro-regions, development regions and counties(12.06.2024) [8].
**own calculation;N – national level;R – regional level.

At the level of the pear species, the variation of the average production from 14 to 19 kg/tree is observed in the case of 2022 and 2018, respectively, highlighting a trend uneven of the indicator, with certain decreasing trends after 2018. For the South-West Oltenia Region, the variation limits were 13 kg per tree in 2020 and 20 kg per tree in 2018, with fluctuating trends. For peaches, the variation limits were recorded at 11 kg per tree in 2022 (the minimum) and 21 kg per tree in 2016 (the maximum), the evolution of the average production being variable, with a sharp downward trend after

2018. As for the regional situation, extreme levels of 11 and 25 kg/tree are noted at the level of 2019 and 2016 respectively, the dynamics showing a variable trend.

If we do not refer to the specific situation of nectarines, there are extreme national levels of 9 and 20 kg/tree respectively for the years 2020 and 2016, the evolution of the indicator being uneven. For the analyzed region, the limits were reached in 2019 and 2017 (12 kg/tree respectively), the dynamics being fluctuating.

At the level of cherry and cherry, the variation of the average production from 11 to 17 kg/tree for 2017 and 2018 respectively is observed, accentuate a trend uneven of the indicator, showing a decline following the peak year. For the South-West Oltenia Region, the variation limits ranged from 11 kg/tree in 2017 to 18 kg/tree in 2018, with fluctuations in the dynamics.

For apricots, the variation limits ranged from 11 kg/tree, with this being the minimum limit recorded in 2022, the maximum level in the case of 2018), the evolution of the average production being variable (ascending between 2016 and 2018, descending between 2018 and 2022). As for the regional situation, extreme levels of 14 and 19 kg/tree are noted in 2022 and 2018 respectively, the dynamics showing an uneven trend.

If we do not refer to the specific situation of the walnut tree, there are extreme national levels of 18 and 29 kg/tree respectively for 2016 and 2018, the evolution of the indicator being variable (alternating periods of increase and decrease). For the analyzed region, the limits were reached in 2016 and 2018 respectively 2019 (19 kg/tree respectively 27 kg/tree), the dynamics being fluctuating, with an upward trend from 2016 to 2018, stationary for 2019, decrease in 2020, stationary in 2021, decrease in 2022).

At the level of other fruits, the variation of the average production from 16 to 23 kg/tree is observed in the case of 2016 (minimum level) and 2018 and 2019 (for the maximum level, respectively), highlighting an uneven trend of the indicator. For the South-West Oltenia Region, the variation limits were 12 kg/tree in 2016 and 21 kg/tree in 2019, the dynamics being fluctuating, showing an increasing trend between 2016 and 2019, a decreasing trend in 2020, a stationary trend for 2021 and a decrease in the case of 2022.

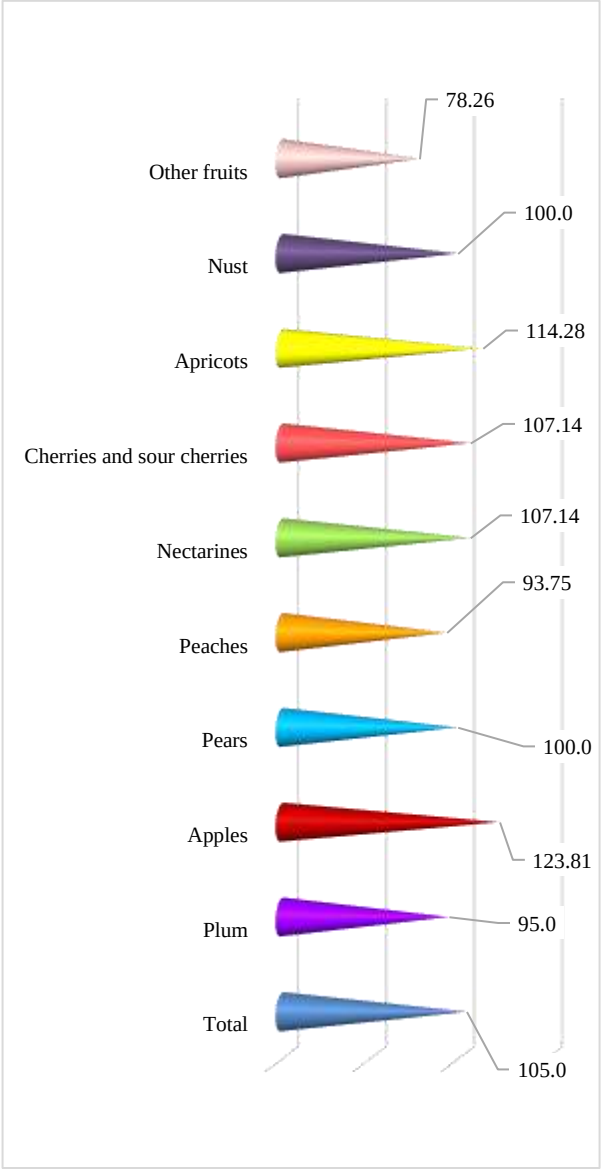

Fig. 3. Positioning of the South-West Oltenia Region at national level, in the case of average fruit production – Average of the period (%)
Source: Own calculation.

If we do not refer to the specific situation of the average of the period, at national level, there is a general situation of 20 kg/tree of the average production, compared to which there were supra-unit levels (for apples, other fruits and walnuts – 21, 23 and 25 kg/tree respectively), equal in the case of plum and sub-unit (16 kg/tree for pear and peach, 14 kg/tree for nectarine, cherry and cherry, apricot). For the analyzed region, the general level reached 21 kg/tree, which was exceeded in the case of

apple and walnut (26 and 25 kg/tree), but there were also species that did not reach it (18 kg – other fruits, 16 kg each for apricots and vegetables, 15 kg each for peaches, nectarines, cherry and cherry).

Analyzing the situation of the South-West Oltenia Region, in the national context, it can be seen that it was positioned as follows (Fig. 3): above the national situation for the general level (+5.0%), nectarine respectively cherry and cherry (+7.14%), apricot (+14.28%), apple (+23.81%); at the same level in the case of the respective walnut hair; below the national level for plum (-5.0%), peach (-6.25%) and other fruits (-21.74%).

CONCLUSIONS

In terms of the number of trees, the South-West Oltenia Region is a significant area nationally, as it accounts for approximately 21% of apricot and blackberry plantations, 25% of plum trees, and 34% of plantations for other species.

Considering the total fruit production, the region contributed approximately 18% to the national output (+0.32% relative to the number of trees). It accounted for 27.03% of the production of other fruit species (-7.63% compared to the proportion of trees), 24.51% of plum production (-0.74% compared to the number of plum trees), and 24.15% of apricotproduction (+2.49% relative to the share of apricot trees).

In terms of the average production per tree, the region is above the national level of the indicator as a whole, but also for apple, nectarine, cherry and cherry respectively for apricot and greenery. In the case of pear and walnut, the ratio between the national and regional levels is equal, while for plum, peach and other fruits, the region is below the national situation.

For the South-West Oltenia Region, there is a need to revive the fruit sector by consolidating the situation of the species that lend themselves best to the regional pedoclimatic conditions, by making the most of the irrigable potential of some lands, based on the combination of the assortment of cultivated varieties, by expanding the variety of species cultivated in the conditions of current climatic changes (the introduction into cultivation of heat-loving species with increased resistance to drought), by modernizing production technologies, by exploiting opportunities related -at least- to the possibility of accessing non-reimbursable projects that allow the modernization of existing plantations and the establishment of new plantations.

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