"FRUIT GROWING IN SERBIA - STATE AND PROSPECTS"

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Abstract

Fruit growing and viticulture in Serbia are liable to various oscillations, especially in production volume, quality, yields, and prices. The results of the agriculture census from 2012 indicate that orchards cover 4.8% of the area of the total agriculture land, which is little considering favourable climatic and soil conditions for fruit growing. Stone fruit species are predominant, and they are followed by pome fruits, and berry fruits. Nut fruits are the least prevalent. In addition to areas, the paper analyzed the data on yields, production technology and other relevant information. Most fruit plantations in Serbia are extensive, with low level of agrotechnics or even without any measures in plantations. The goal of the paper is to indicate that there is a need for creating the Regions of Fruit Growing Production in Serbia. By defining regions, conditions would be created for accomplishing the growth of fruit production, intensification and introduction of new technologies and cultivars which should be adapted to climatic changes.

Key words: census, fruit growing, state, proposal of measures, technologies

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Introduction

Fruit growing is a very important branch of agriculture in Serbia. Fruit production accounts for about 11% of agriculture production value (Development Strategy of Agriculture of the Republic of Serbia 2014-2024). Natural conditions of particular regions in Serbia do not correspond to other areas of plant production, but for particular fruit species these regions are optimal place for achieving top results in terms of quality, yields and revenues. Long tradition of producing plums, raspberries, apples and sour cherries is one of the reasons why these fruit species are the most important for fruit production in Serbia. Most other continental fruits (peaches, pears, apricots, cherries, strawberries, blackberries) are also traditionally grown in some regions of Serbia.

In the period 2000-2013, the total fruit production in Serbia varied from 600,000 tonnes in 2001 to an all-time high of 1,523,000 tonnes in 2013 (Graph 1). Factors affecting the oscillations of the yield are: occurrence of low winter temperatures and early spring frosts, damages from hail, drought, occurrence of surface water, abrupt changes of temperature in a dormant period, alternate bearing, etc. The risks for a yield are certainly reduced by an increase in intensity of production through installing irrigation systems, anti-hail nets, anti-frost systems, etc. However, they are expensive investments which are profitable only in agro-ecological conditions which are appropriate for a particular fruit species.

Serbia is a leading fruit producer in the region. For particular fruit species, we are a leading country at both European and global levels. Due to duty-free status with the Russian Federation and CEFTA agreement, a major part of table fruit is launched to these markets, while frozen fruit and products are exported to the EU. Export structure of agricultural products consists of 17% of fruit and fruit products (Development Strategy of Agriculture of the Republic of Serbia 2014-2024).

The capacity of cold stores and warehouses for various products made of processed fruits (including freezing) are generally sufficient for storing all fruits intended for such types of processing, except in the years of hyper production such as 2013. Capacities are mostly regionally located at production places, although some cold stores are outside the production area. The capacity for storing table fruits are insufficient; except for apples, technology of storing fruits is at low level, and modern cold stores of higher capacity are mostly placed in Vojvodina. Unfortunately, it is often the case that producers do not have their own cold stores, but they
are mostly owned by companies which purchase fruits, like in the case of raspberries and blackberries. It is necessary to adopt a number of new laws and regulations such as Law on Integral Production, to amend Law on Production of Planting Material, and define Official Regions of Fruit Growing and Viticulture Production in Serbia which should be the foundation of any development policy in this area. Estimates of areas covered by particular fruit species were quite unrealistic, especially the data available at the website of FAO organization. The agricultural census has provided a much more realistic picture, and this text is based on these data, while FAO data were used for presenting data on areas in other European countries.

**Fruit Growing in Serbia**

Due to the Agricultural Census conducted in Serbia in 2012, for the first time in the last 50 years accurate data have been obtained about areas covered by orchards, both in total and according to fruit species. The census results show that orchards cover 163,310 ha (without strawberries), that is, 4.8% of the total agriculture land, which is little considering favourable climatic and soil conditions for fruit growing.

**Orchard Area in Total**

The largest areas of orchards in Serbia are in western Serbia, Šumadija, Podunavlje (Grocka and Smederevo) and parts of southern Serbia. Although considerable areas of modern fruit plantations are also in Vojvodina, the areas are considerably smaller than in the mentioned parts of Serbia. Moreover, eastern and south-eastern Serbia is a region where fruit growing is a less prevalent branch of agriculture. The largest areas of orchards are in the municipality of Grocka (7625 ha), followed by Valjevo (5657 ha), Prokuplje (4565 ha), Smederevo (4412 ha) and Čačak (4165 ha). In some cases (Grocka, Smederevo), apart from excellent climatic conditions, proximity to Belgrade market was decisive for the development of fruit growing, while decisive factors for other municipalities mentioned were agro-ecological factors, and impossibility to grow other cultures in those areas. However, considering the areas of plantations, that is, extensive plantations, the fruit growing map of Serbia changes a lot. Western Serbia and Šumadija have large areas of extensive plantations (Valjevo,
Kraljevo, Užice, Bajina Bašta, Kragujevac), and the largest areas of plantations are in the municipalities of Grocka, Smederevo, Prokuplje, Topola and Valjevo. The share of extensive plantations in Vojvodina is small, and there is an assumption that plum plantations account for the largest percentage of extensive plantations in Serbia.

**Pome Fruits**

Pome fruits in Serbia cover a little over 20% of the total area of orchards. The conditions for growing these species are mostly favourable, and predominant production regions are in Podunavlje, northern Bačka, Srem and Šumadija. The share of pome fruits in the total fruit production is about 25%, which indicates greater intensity of growing of these fruit species compared to the others.

**Apples**

The most important pome fruit species covers 23,737 ha in Serbia and it is second only to plums for the area it covers. In European terms, Serbia is in the 12th place according to areas covered by apple trees. The largest areas of apple trees are in the municipalities of Subotica (1596 ha), Smederevo (1340 ha), Grocka (1219 ha), Čačak (831 ha) and Arilje (778 ha). There are also considerable areas in Srem, parts of Šumadija, and southern Banat. This is primarily due to the fact that apples tolerate low winter temperatures, there is a wide choice of rootstocks and varieties, and fruits can be stored for a long time.

In Serbia, a record volume of apple production was achieved in 2013, when 332,255 tonnes were produced (Graph 1). However, a real indicator of state is a yield per a unit of area. An average yield is about 10.7 t/ha, which is very little in comparison with averages of developed fruit growing countries in Europe, but at the same time, it is an indicator of extensiveness of a good part of plantations. According to Keserović (2012), new highly intensive high density orchards with anti-hail nets and irrigation systems yield from 50 to 70 t/ha in full productivity depending on the cultivar. An apple is one of rare fruit species for which the latest technologies have been introduced that can be compared to the most developed fruit growing countries in the world.

Pears

The total area covered by pear trees in Serbia is 7,343 ha which puts it in the 10th place in Europe. By far the largest areas are in the municipality of Leskovac (362 ha), then Čačak (287 ha), Šid (215 ha), Kraljevo (202 ha), and Grocka (196 ha). Apart from these municipalities, pears are also considerably present in other parts of Srem, in the north of Bačka, Mačva, parts of western Serbia and Šumadija.

In Serbia 68,121 tonnes were produced in the record year of 2013, which is much lower than 80,000 tonnes produced annually during the 1980s. Larger orchards have been planted in the last few years, especially in Srem, but this has not been accompanied with the latest technology as it is the case with apple orchards. The average yield is still low, only about 7.5 t/ha.

**Quinces**

Although quinces are very popular fruit, primarily for brandy production, they are little prevalent in the agriculture of Serbia covering only 1,631 ha. Even these small areas are sufficient for Serbia to be a leading country in Europe according to areas covered by quince trees. The largest areas are in the municipality of Blace (98 ha), then in Aleksandrovac (73 ha), Kraljevo (68 ha), Prokuplje (65 ha) and Vranje (55 ha), hence, mostly in southern and central Serbia.

If Turkey is omitted, Serbia is in the first place in Europe according to production totaling 13,955 tonnes. According to statistical data, in particular years, production exceeds 15,000 ha, and the average for the last four years is 12,696 tonnes. The average yield is 12.7 t/ha. In 2013 and 2014, there was a great interest in planting quince orchards.

**Stone Fruits**

More than two thirds of fruit plantations in Serbia are stone fruits (about 67%), and plums account for two thirds of that percentage. Production of stone fruits is prevalent in all parts of Serbia, but it depends a lot on particular fruit species. Among other factors, such large prevalence of stone fruit trees was influenced by extremely favourable natural conditions for their growing, proximity to processing capacities, demand of fresh, frozen and dried fruits.
Stone fruits are also predominant according to production volume with the share of 57% in the fruit production. If we compare this with the area, we see that the percentage is lower, which indicates that a good part of plantations is extensive, that is, with small yields. After plums, sour cherries are the most important fruit trees in this group.

**Plums**

A plum is a leading fruit species in Serbia, and it can even be said that it is one of the symbols of Serbia. The total area of plum trees amounted to 77,949 ha in 2012, putting Serbia in the first place in Europe. Plum trees are grown across the whole territory of Serbia, but the following areas stand out: western Serbia, Šumadija, and a part of southern Serbia around Prokuplje. Leading municipalities according to the area are Valjevo (4006 ha), Kraljevo (2351 ha), Kragujevac (2330 ha), Osečina (2265 ha), and Prokuplje (2049 ha). Tradition, favourable natural conditions, brandy processing, etc. have previously influenced producers’ decision to produce plums, but unfortunately mostly in an extensive way. There are a few plantations which produce fruits for table consumption, and most plantations are quite old. Last year 738,278 tonnes of plums (Graph 3) were produced in Serbia; therefore, we can conclude that the average yield was only a bit above 10 t/ha in the record year.

![Plum Production Graph](image_url)


Production is annually increasing, which indicates that extensive production is increasingly replaced with semi-intensive and intensive
ways of growing. There are obvious changes in cultivar assortment of this fruit species. Predominance of indigenous brandy cultivars is disappearing; cultivars such as Čačanska Lepotica, Stanley and Čačanska Rodna are being more and more grown and they are slowly taking a leading position in plum growing. To a lesser extent there are also Čačanska Rana, Timočanka and Čačanska Najbolja.

Sour Cherries

In Serbia, there are 13,990 ha covered by sour cherry trees, so according to the area, Serbia is in the fourth place in Europe. Large areas of sour cherry trees are in southern and eastern Serbia, Mačva, parts of Šumadija, Srem, in the north of Bačka and in middle Srem. A sour cherry is one of the rare fruit species which is considerably prevalent in eastern Serbia. Municipalities with the biggest production of sour cherries are Prokuplje (2085 ha), Merošina (1411 ha), Leskovac (1353 ha), Knjaževac (926 ha) and Šabac (588 ha).


A multi-year average of production is 82,436 tonnes (Graph 4), which puts Serbia in the fourth place in Europe. Our data show that the yield is a bit below 6 t/ha. Low yields, accompanied by poor quality of fruits, low or annually variable purchase prices and often inadequate relationship between producers and purchasers have caused the unprofitability of growing and even clearing of orchards in some years. Most of produced sour cherries are used frozen (with or without stones), canned and also a
Clones of Oblačinska sour cherry and Cigančica account for almost 85% of the total sour cherry production in Serbia (Cerović and Radičević, 2008). The improvement of cultivar assortment, growing technologies and sour cherry processing, accompanied by creation of encouraging environment, can lead sour cherry growing from extensive and semi-intensive to intensive production.

### Peaches

A peach is a stone fruit species which is quite sensitive to low temperatures, and therefore it is prevalent in fewer regions with the total area of 8,012 ha. According to the area, Serbia is in the fifth place in Europe. Most areas are in Podunavlje and central part of Šumadija which is next to Podunavlje, then in Srem, especially in municipalities which are on the slopes of Fruška Gora, northern Bačka and southern Banat. By far the largest areas covered by cherry trees are in Gacka (2372 ha) and Smederevo (1961 ha), and far behind them are Topola (426 ha), Mladenovac (296 ha) and Indija (248 ha). The plains of Vojvodina are not recommended for peach growing, resulting in frequent years of flower freezing in northern Bačka.

In the last four years, yields have been 69,093 tonnes. According to FAO data, Serbia is in the fifth place in Europe with this production. The causes for annual yield variations are low winter temperatures and early spring frosts. On the other hand, negative indicators are production on small private areas, disunity, heterogeneity and obsolete cultivar assortment which has not followed dynamic changes in global cultivar assortment of peaches. Today, predominant cultivars in our orchards are ones of middle or mid-late time of ripening, while the most predominant rootstock is a seedling of vineyard peach (Nikolić et al, 2010).

### Apricots

Apart from a peach, an apricot is one of the most sensitive fruit species to low temperatures, both winter and spring frosts when blooming and at the end of flowering. Regardless of this fact, a lot of plantations of apricot trees have been planted in the plains of Vojvodina, which is risky and unjustified. However, apricots are mostly grown in Podunavlje and the environs of Čačak. The areas of apricot trees in Serbia total 5,290 ha and according to the area, Serbia is in the eighth place in Europe. Regarding
municipalities, by far the largest areas are in Grocka (1949 ha), then in Čačak (549 ha), Smederevo (234 ha), Zrenjanin (95 ha) and Subotica (94 ha).

The volume of annual production has varied in the recent years from 12,747 tonnes in 2002 to 40,754 tonnes in 2004, while the average of the last four years was 23,504 tonnes. Serbia is in the sixth place in Europe according to the production, but its yield is only 7.1 tonnes. An increase in the demand of fruits for fresh consumption has caused the introduction of new cultivars, such as Roxana, Cegledi Bibor, Hungarian Best, Kecskemet Rose, Ambrosia, and domestic cultivars: ns-4, ns-6, Novosadska Kasnocvetna i Novosadska Rodna. The most commonly used rootstock is seedling of Dzenarika. The improvement of apricot production should be based on limiting apricot production to adequate agro-ecological conditions, the use of virus-free planting material, combining cultivars in orchards, and more intensive technology of growing.

**Cherries**

By far the largest areas of cherry trees in Serbia are in the municipality of Grocka (1032 ha), which account for more than a fourth of the total area covered by cherries in Serbia (3682 ha). Serbia is in the 14th place in Europe according to the areas. It is known that the center of cherry growing is the village Ritopek. Apart from Grocka, cherries are also grown to a greater extent in Smederevo (182 ha), Čačak (126 ha), Smederevska Palanka (77 ha), and Topola (73 ha).

The highest production was recorded in 2004 and it was 30,825 tonnes, while the lowest one was in 2002. The average for the last four years is 25,279 tonnes. Our data show that the average yield is 6.9 t/ha. Some of the most important restraining factors for cherry production in Serbia are inadequate cultivar assortment, the use of vigorous generative rootstocks, vigorous trees and large planting distances which hamper the use of agro and pomotechnical measures, as well as fruit harvest. In addition to standard cultivars with which producers have had positive experience (Souvenir, Burlat, Stark Hardy Giant, Van, Stella, Germersdorf), new cultivars should be recommended as suitable for commercial growing. According to the research in experimental and commercial orchards, they have showed positive biological and production characteristics (Burlat C1, Carmen, Early Korvik, Summit, Cordia, Lapins, Regina, Karina, Sweetheart). These trends in the improvement of the cultivar assortment should be accompanied by positive moves regarding growing technology,
from the choice of growing system and the use of dwarfing rootstocks to the use of adequate agro and pomotechnological measures.

**Nut fruits**

Mostly grown nut fruit species in Serbia are walnut and hazel. However, the share of plantations covered by these species is not larger than 5% of fruit plantations. The most important species of nut fruit trees, walnut and hazel, are relatively neglected fruit species which is indicated by the total production. The production of nut fruits accounts for only about 1.6% of the fruit production in the last four years.

**Walnut**

A walnut is grown in all parts of Serbia, and there are mostly extensive plantations. The total area is 4,787 ha, putting Serbia in the 11th place in Europe. The largest areas are in the municipalities of Valjevo (146 ha), Kraljevo (127 ha), Kragujevac (124 ha), Kula (122 ha), and Brus (113 ha).


The total production from 2000 up to now has varied from 10,238 tonnes in 2002 to 25,172 tonnes in 2009. The average of the last four years is 20,475 tonnes (Graph 5). Serbia is in the fifth place in Europe according to its production.
Walnut cultivar assortment is relatively old; it is changing slowly and it is not dynamic like ones of other fruit species. Leading cultivars and selections in production should be: Rasna, Srem, Šampion, Kasni Rodni, Tisa, Ovčar, and Šejnovo. Among pollinators there should be Geisenheim 139, Geisenheim 251 and Jupiter, and prospective ones are Fenor, Fernet and Tiszacsecsi 72. In Serbia, a lot has been done to create new walnut cultivars, but not enough to introduce modern technologies. In addition to walnut fruit production, attention should be given to the production of walnut trees aimed at the production of wood which is highly respected in furniture industry.

Hazel

The areas covered by hazel in Serbia are 2,239 ha, which places it sixth in Europe. Although natural conditions of different parts of central Serbia are more favourable for growing of hazel, most plantations of this species are in Vojvodina. They are mostly large plantations partially of bushy form and partially of tree form grafted on Turkish hazel. The largest area is in the municipality of Šid (137 ha), then in Pećinci (111 ha), Kula (107 ha), Šabac (71 ha), and Vršac (51 ha). There are not any statistical data on yields and production of hazel in Serbia. It is estimated that production totals from 800 to 1000 tonnes. Leading hazel cultivars in new plantations are Ennis, Tonda Gentile delle Langhe, Tonda Gentile Romana, Tonda di Giffoni, and Istarski Dugi; and pollinators are: Roman, Noccione, and Hall’s Giant (Cerović et al, 2003).

Berry fruits

Two very important fruit species for the export of Serbia (raspberry and blackberry) cover about 8.6% of the fruit growing area. Although a strawberry belongs to berry fruits, it is added to the group of vegetables by the Agricultural Census; therefore, areas covered by strawberries are not included in the total area of orchards. Other fruit species (blueberries, currents, aronia berries) are currently little present. For many years, berry fruits have been at the top of the most important agricultural export products for Serbia, right behind cereal crops. Considering the state of our agriculture and that the export volume is about 100,000 tonnes (mostly frozen fruits) and the revenues are over $200 million, it is expected to hold that position. Primary position belongs to raspberries, which is followed by strawberries and blackberries. In Serbia, the average production of berry fruits for the last four years was
140,369 tonnes, accounting for about 10.94% of fruit production in Serbia for the last four years.

**Raspberries**

A raspberry is a leading fruit species according to the export value, and it is grown on the area of 11,041 ha. If we add the areas of blackberries (2,977 ha) to this, in order to make a comparison with FAO data which encompass these two species together, Serbia is in the third place in Europe according to the area covered by these species. The production is mostly concentrated in western Serbia and partially in some parts of southern Serbia. Mostly, one cultivar, Willamette, is produced, which is intended for freezing, while table cultivars are little present. The largest areas of raspberries are in the municipalities of Ivanjica (1249 ha), Arilje (1226 ha), Krupanj (759 ha), Brus (705 ha), and Bajina Bašta (694 ha).


The total production of raspberries in Serbia was at the stable level of a bit over 80,000 tonnes until 2012. In that year and in 2013, it fell to about 70,000 tonnes (Graph 6). The reasons can be found in planting shoots from commercial orchards, the occurrence of drought and frost in 2012, and poor production technology. Raspberry cultivar assortment in Serbia was established long ago and it does not change easily. Willamette is predominant with 95%, Meeker follows with 3-4%, and all other cultivars account for 1-2% (Nikolić et al, 2007).

Raspberry growing technology in Serbia is moving into two directions. On the one hand, there are producers who improve the production through
expanding areas, appropriate use of all agro-technical measures, introduction of irrigation systems, but the number of such producers is very small. On the other hand, there are producers who do not invest enough in nurturing plantations, which are already old, and therefore they produce smaller and smaller yields and poorer quality of fruits. The current ratio between these two groups is almost equal, which maintains the level of production, but unfortunately, the quality is decreasing. While yields of the first group can surpass 20 t/ha, ones of the second group are quite low and amount to about 5 t/ha. Due to insufficient production of certified nursery stock and using shoots from commercial orchards, as well as drought in the recent years, raspberry production has declined. Considering that a raspberry is a strategic fruit species in Serbia, since it has been among the first three export agricultural products in the last ten years, expert studies should be conducted on cultivars and clones, and production of certified planting material and production technology should be improved.

**Blackberries**

A blackberry is the most important berry fruit species in Serbia after a raspberry. It is grown on the area of 2977 ha. Like raspberry production, it is concentrated in western Serbia, but the production centre is in the environs of Valjevo, Podrinje and Mačva. Another important production region is southern Serbia. The largest areas of blackberries are in Osečina (586 ha), Valjevo (432), Krupanj (227 ha), Brus (183 ha) and Aleksandrovac (159 ha). According to blackberry production, Serbia is highly ranked in the world; it is in the fourth place behind the USA, China and Mexico (Strik et al, 2008). The production is slowly increasing after the decline in the period 2008-2010. In the last four years, production has varied from 33,544 tonnes in 2011 to 25,000 in 2012, when extremely strong frost during winter caused severe winter kill of plantations, which was followed by drought during summer. Two cultivars are predominant in the cultivar assortment: Čačanska Bestrna and Thorn Free, which account for 95% (Nikolić and Milivojević, 2010). In the period of the renewal of blackberry orchards (in 2011 and 2012), the new cultivars, Loch Ness and Chester Thornless, were spreading widely. Technology of blackberry growing is relatively adequately applied, and irrigation is much more common than with raspberries, although it is still insufficient (about 20% of orchards).
Strawberries

In 2012, the areas of strawberries amounted to 1801 ha, which is much more realistic area than 7400 ha recorded in the FAO data base. Unlike raspberries and blackberries, strawberry production is mostly concentrated in Mačva, Podunavlje, southern Serbia and the parts of Pomoravlje. In Mačva and Podunavlje, the production is mostly intended for table consumption, and partially for processing. In other mentioned parts of Serbia, the cultivar Ženga Zengana is mostly produced, which is intended for freezing, but also for various types of processing. With regard to municipalities, the largest areas are in Šabac (292 ha), Varvarin (184 ha), Kruševac (160 ha), Grocka (130 ha), and Leskovac (122 ha).


The total production of strawberries has varied from 24,910 tonnes in 2000 to 37,924 tonnes in 2008 (Graph 7). State of strawberry production in Serbia is characterized by the predominance of strawberry growing in the open field without covering land with foil, without irrigation and setting up any protected area. Other characteristics are old plantations and their exhaustion, prevalence of the cultivar Ženga Zengana, and the use of plants from commercial orchards for new plantations. More modern strawberry plantations on beams covered by black foil ensure greater yields, but they are rare (about 15-20%) and they are mostly around Belgrade, Smederevo, Vojvodina, Mačva, and Pocerina.
Strawberry cultivar assortment in Serbia is heterogeneous. The cultivar Ženga Zengana is predominant in older plantations in Pomoravlje and
southern Serbia, while in addition to this cultivar, the old cultivar Favet is present in other parts of Serbia. In the last decade, the share of relatively new cultivars, mostly from Italy, has been increasing.

**Other berry fruits**

Although there are favourable natural conditions as well as market demand, the production of other berry fruits is marginal and they cover only 414 ha. Mainly, they include black and red currents, blueberries and recently aronia. Gooseberries, cranberries and jostaberries are present only in traces. According to the areas, Gornji Milanovac stands out with 27 ha. Planting of black and red currents is being intensified and it is estimated that the areas covered by this culture are between 70 and 80 ha, mostly in western and southern Serbia. In the last 5-6 years, about 100 ha have been planted with highbush blueberries (*Vaccinium corymbosum* L), mostly in western Serbia. Production has only reached about 100 tonnes, because orchards are new, and old ones almost do not exist. The cultivar assortment is modern and the cultivar Duke is predominant. Primarily due to great media support, aronia is suddenly expanding in almost all parts of Serbia. It is modest regarding its needs for the environment conditions and agro-technics. It is neglected the fact that it is hyper-produced in Europe, and that in Poland, a country with the largest production of aronia, it is mostly not harvested (about 20-50% is harvested annually), because of the low demand and low prices. Most fruits and various processed products made of aronia originate from Poland, and not from domestic orchards. So far, there are about 50 ha of new plantations with unjustifiably expensive young trees, mostly from import.

**Conclusion**

Fruit growing and viticulture in Serbia are important branches of agriculture, and in almost all parts of Serbia, some fruit species has found a suitable place for growing. Moreover, most fruit species are produced in several major production regions, which has been caused by various factors, mostly climatic ones, but also by the proximity of market, cold stores, processing capacities and driers. Some fruit species are grown unjustifiably beyond favourable agricultural conditions, and therefore it is necessary to provide recommendations for creating regions of Serbia for growing fruits and their cultivars. Stone fruits are predominant, and they
are followed by pome and berry fruits. Nut fruits are the least prevalent. A plum is still a predominant species according to its area, and an apple is the second.

For the first time, the census has provided insight into the exact areas of fruit species, the structure of orchards regarding the intensity of production, as well as a number of other data. So far, available data have been far from realistic, but it is assumed that most orchards recorded by the census are out of market production.

References