

## ORIGINAL ARTICLE

**FRUIT GROWING IN ROMANIA IN THE 20<sup>TH</sup> CENTURY**  
**POMICULTURA ROMÂNIEI ÎN SECOLUL XX**

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**REZUMAT**

În România, pomicultura are o veche și bogată tradiție. De-a lungul sec. XX, pomicultura României a cunoscut transformări fundamentale. Astfel, suprafața ocupată cu pomi fructiferi era de 340.100 ha în 1927, 184.200 ha în 1950, 428.400 ha în 1970 și 239.900 ha în 1999. Producția totală de fructe a variat, în aceste perioade, între 401.100 tone în 1950 și 2.183.000 tone în 1993. În pofida faptului că în 1993 s-a realizat cea mai ridicată producție de fructe, consumul mediu de fructe/locuitor a fost de numai 35,7 kg, semnificativ mai scăzut decât cel considerat optim pentru indivizii adulți și, în zona temperată (62 kg/locuitor). Principala cauză a acestui consum scăzut a constituit-o structura varietală deficitară, în care prunul reprezenta mai mult de 40% din toți pomii fructiferi ai țării. O altă cauză ar fi reprezentată de producțiile scăzute la unitatea de suprafață la toate speciile și soiurile de pomi fructiferi cultivate în România în ultimii 30-40 de ani. Datorită scăderii accentuate a suprafețelor pomicole, în ultimii ani, și considerând în continuare structura varietală deficitară, ne putem aștepta ca, în viitor, consumul mediu de fructe/locuitor să scadă chiar și sub cel înregistrat în 1993. Soluțiile de ieșire din acest impas nu sunt multe, dar una din ele ar fi aceea a creșterii substanțiale a producțiilor medii/unitatea de suprafață, la toate speciile pomicole aflate în cultură în România, cel puțin până la nivelul producțiilor realizate în prezent în livezile comerciale din Comunitatea Europeană.

**CUVINTE CHEIE:** pomicultură, România, suprafețe cultivate, producție, consum kg/locuitor, sec. XX

**ABSTRACT**

In Romania, fruit growing has an old and rich tradition. During the 20th century, the Romanian fruit growing witnessed dramatic changes. The acreage grown with fruit trees was 340,100 ha in 1927, 184,200 ha in 1950, 428,400 ha in 1970 and 239,900 ha in 1999. Total fruit yield varied during this period of time between 401,100 tons in 1950 and 2,183,000 tons in 1993. In spite of the fact that in 1993 was produced the highest total fruit yield, the average fruit consumption/capita was only of 35.7 kg which is significantly lower than that considered optimal for adult people in temperate zones (62 kg/capita). The main reason of this situation is the poor varietal structure of fruits in which plum trees represented more than 40% of all the fruit trees grown. Another reason would be the low yields/ha registered in all species and cultivars of fruit trees grown in Romania in the last 30-40 years. With a very serious shrink of acreages grown with fruit trees in 1999, the average consumption/capita is expected to become totally unfavorable. There are not many solutions to this problems and one of them certainly means the significant increase of average yields in all fruit species grown in Romania, at least to the level of those achieved in industrial orchards of Western Europe.

**KEY WORDS:** fruit growing, Romania, areas, yields, consumption kg/capita, XX-th century.

## DETAILED ABSTRACT

Fruit growing in Romania, has an old and rich tradition, but the most significant changes, in this field, occurred during the XX-th century, when the areas grown to fruit trees, the varietal assortment as well as the total fruit yield were dramatically modified.

At the beginning of the last century, in 1927, the area grown to fruit trees in Romania was of 184,200 ha, made up mainly of isolated trees and very few (if any) of commercial orchards. The varietal structure was totally unbalanced, more than 90% of fruit yield consisting of plums.

The communist regime, at the peak of its economic expansion (1970), succeeded in increasing the total area grown to fruit trees up to 428,400 ha, most of it being represented by commercial orchards. The total fruit yield of that period of time was still not very high (approx. 900,000 tons) which meant an average consumption/capita close to 39 kg, quite far from 62 kg/capita considered as optimum in a temperate climate characteristic to Romania. It is obvious, from the analysis of the data that either the figures in official statistics are totally unreliable (usually they were „adjusted” according to political commandments) or the average yields, in all fruit species, were extremely low. Most probably both statements are valid. The only real achievement of this period of time was an obvious trend of increasing the percentage of apples and pears in the total varietal structure. Thus, at the end of this period of time (1989), apple and pear were the two most important fruit species (43.9%), plum orchards (and isolated trees) representing only 34.8% of the total area grown to fruit trees.

The fundamental changes which took place starting with 1989 have dramatically decreased both the fruit acreage and total fruit yield. Lots of orchards, formerly belonging to state or cooperative farms, were given back to their original and legal owners. More than often, the destination of these orchards was totally altered or very seriously compromised and consequently, in 1999, the official statistics spoke of only 239,000 ha of fruit orchards in Romania, with a total fruit yield of 1,287,500 t. It is very obvious that the nowadays situation is somehow better than that described for the 1990s, meaning an average fruit consumption/capita of 56 kg (still far from what is considered as normal in Western Europe).

Strong facts are presented in the paper proving that the present acreage grown to fruit trees, in Romania, is quite sufficient to provide a total fruit yield which would assure an average consumption/capita close to 70 kg and a good part of this yield still remaining to be exported. This would be possible simply by applying adequate technologies to the existing commercial (and noncommercial) orchards thus increasing the mean fruit yield up to at least 10 t/ha. The fact has to be mentioned that the Prospective Plans of the Romanian Ministry of Agriculture, Waters and Forestry aim at this level of average fruit yield for the end of 2004. Pros and cons are presented in the paper concerning the realistic or unrealistic character of this governmental provision as well as the main steps to be taken to make it an attainable one.

## INTRODUCTION

Fruit growing, in Romania, has been practised since immemorial times. Numerous documents prove the fact that in the 14th and 15th centuries, in the hilly areas of Transylvania, Muntenia and Moldavia fruit trees were extensively grown, some of those old cultivars of apple, plum, pear etc. being present even now in the varietal assortment of these species. There is no doubt that during their history, fruits have been always considered a particular wealth of Romanian territories.

One of the most prominent kings of Moldavia, namely Dimitrie Cantemir, in his book „*Descriptio Moldaviae*” (written in 1716, published in Romanian in 1825) provided valuable information on fruit tree varieties grown in Moldavia, on the main areas of the country with good climatic conditions for fruit trees as well as the quality of Moldavian fruits. Ion Ionescu de la Brad (1870), the initiator of Romanian Agricultural Higher Education, in his fundamental paper „*Elementary Lectures of Agriculture*”, dedicated a whole chapter to fruit growing, thus providing once more the importance and continuity of this ancient agricultural activity.

The end of 19th and beginning of 20th century witnessed the foundation of the first fruit nurseries in Romania (Strehaia, Pinteana, Botoșani, in 1889; Urlați, in 1890; Ciuperceni, in 1892; Istrița, Pietroasa, Vișnița, in 1893; Cotnari, in 1896; Drăgășani, in 1897 and Isaccea, in 1904). The geographical distribution of these nurseries faithfully follows the main fruit growing basins of the Old Kingdom of Romania, being considered the starting point of the

modernization process of the Romanian fruit growing.

## MATERIAL AND METHODS

For a fair discussion of Romanian fruit growing evolution, especially during the 20th century, a thorough inventory of all statistics, referring to this problem, has been performed. A special interest has been given to figures illustrating acreages grown to fruit trees, yield levels, share of fruit species in the total fruit production, mean fruit consumption/capita etc.

Since the social and political realities of the last decade of the 20th century significantly affected all the parameters under study, the collected data have been structured on distinct periods of time. The Statistical Yearly of Romania [9], Romanian Encyclopedia [10], as well as other specialized sources [6, 7, 8] have been extensively used for the elaboration of this paper.

## RESULTS AND DISCUSSION

In the first two or three decades of the 20th century, Romania was considered as being an „eminently agricultural” country. Its fruit growing sector was represented mainly by solitary trees and very few extensive orchards, with low numbers of trees/ha and poor yields both quantitatively and qualitatively. As it can be noted from the data in Table 1, the total acreage grown to fruit trees, in 1927, was of 340,100 ha and it decreased in the years to come as a consequence of a gradual shift to commercial orchards.

Table 1: Areas grown to fruit trees in Romania between 1927-1999 (in thousand hectares)

Year	1927	1938	1950	1960	1970	1980	1990	1999
Area	340.1	247.0	184.2	212.2	428.4	356.6	313.4	239.9

The species assortment was, until 1950s, totally unbalanced, the share of plum trees being between 55-90%. Apples, the second most important fruit species grown were far behind, with only 14,3%, followed by nuts (13,5Many Romanian varieties and local populations (Văratice, Coldușe, Galbene, Sticloase, Grase, Vinete, in plum; Creșetești, Domnesc, Pătul, Poinic, in apple) as well as western varieties which had been imported in the last decade

of 19th century (Parmain d'Or, London Pepping, Reinette of Canada, R-tte Ananas, R-tte of Champagne, Jonathan, Belle de Boskoop, Calville Rouge, Boiken, Landsberg) %) were also grown.

The geographical repartition of fruit species, evolved mainly as a consequence of natural selection and only later on as a conscious activity, following faithfully the climatic favourability: species with high

requirements toward temperature were spread mostly in the Southern and South-Eastern Plains while species with low requirements for temperature were grown in the hilly, submountainous areas of Carpathian Mountains, in Vestern Transylvania and Banat.

The fact is well known that between the two world wars 1938 is considered the peak year of Romania's development, both from industrial and agricultural

point of view. Though the total area grown to fruit trees was 100,000 ha smaller than in 1927, the total fruit yield went up to 1,380,900 tons. The varietal structure had been seriously improved as well, since at the moment, apple represented 40.8%, plums 19,6% and pears 9.9% (Table 2). Until 1950-1960, the areas grown to fruit trees and the total fruit yield decreased very obviously as compared to those registered in 1938.

Table 2: Fruit yields, in Romania, between 1938-1999 (thousand tons)

Species	1938	1950	1960	1970	1980	1990	1999
Apples	566.5	76.4	111.1	175.8	413.9	683.2	316.1
Pears	138.7	14.7	45.8	53.9	82.2	73.8	63.8
Plum	272.9	230.5	496.5	697.1	621.1	449.5	364.6
Peaches	15.0	1.5	5.5	28.6	58.1	52.9	16.4
Apricots	80.5	7.2	24.9	46.5	35.3	48.0	31.6
Cherries	119.5	23.2	55.8	61.1	72.2	67.7	71.8
Nuts	128.5	17.8	48.6	32.6	37.0	26.0	31.2
Strawberry	-	-	14.4	31.5	35.1	18.2	18.7
Other species	59.3	29.8	41.3	46.6	62.7	33.7	24.3
Total fruit yield	1380.9	401.1	843.9	1173.7	1417.6	1453.0	922.3
Mean fruit yield t/ha	5.59	2.18	3.98	2.74	3.97	4.64	3.84

A real change in this decreasing trend is felt after 1962 when the whole responsibility of fruit growing in Romania is transferred to the newly created Institute for Fruit Research Pitești-Mărăcineni. Taking advantage of the Government's favourable policy toward extension of fruit growing, new semi-intensive and intensive orchards were planted very rapidly all over the country. As a consequence, in 1970, Romania registered its largest area grown to fruit trees (428,000 ha) but the total fruit yield was still significantly lower than that of 1938. Besides this serious expansion of fruit areas, one of the most important achievements of this period of time was a significant change in the structure of fruit species: apples and pears were grown on 45-48% of the total fruit area while plums represented only 12%. A second valuable achievement could be considered the beginning of a scientific breeding process for all fruit species, which yielded later on in an impressive number of new varieties [1], [3], [4] (i.e. Ardelean, Romus 1, Romus 2, Voinea, Auriu de Bistrița in apple; Triumf, Daciana, Argessis, Napoca, Haydeea, in pear; Albatros, Silvia, Pescăruș, Diana, Carpatin in plum etc.)

This trend of fruit growing development steadily continued until 1980s when, out of 356,600 ha of orchards, 25% were new ones, most of them

organized in intensive and superintensive systems. For the first time, the total fruit yield (1,417,600 t) exceeded that of 1938, the share of apples, pears, peaches, cherries together being more than 60% as compared to 35% of plums. The situation is much the same in 1990 when total fruit yield is even higher than that of 1980, in spite of the fact that the total areas grown to fruit trees kept on decreasing (old, unproductive orchards had been either abandoned or turned into other agricultural or nonagricultural use).

Even in the best years of Romanian fruit growing (1938, 1980, 1990), the fruit consumption/capita was low or very low (35-39 kg), these figures being far below the normal fruit consumption/capita recommended for temperate countries (62 kg). The main reason of this situation was the poor mean yield/ha registered in all species. On the other hand, one has not to neglect the fact that official communist statistics were very often „adjusted” to fit political interests. Therefore, figures illustrating increased areas of fruit growing in Romania, after 1960s, are only partially reliable. Further more, due to poor facilities for medium and long term storage of fruits as well as to those for industrial processing of fruits destined to human consumption, a considerable part of total fruit yield was (and still is) distilled.

Moreover, it has to be taken into consideration the fact that before 1989, in order to reimburse previous external loans, Romania exported each year agricultural products (including fruits) without paying any attention to requirements for a normal mean fruit consumption per capita.

The fall of communist regime (1989) brought fundamental changes to the whole Romanian agriculture, including the fruit-growing sector. The total acreage grown to fruits decreased significantly down to 239,900 ha, mainly due to the fact that a

great part of the land belonging to state and cooperative farms was given back to their former, legal owners who, more than often, possessed no financial or technical means to efficiently exploit a fruit plantation. Almost invariably, these plantations were ruined or quickly turned into arable land or other type of agricultural use. Additionally, due to the high costs of investment (planting material, mechanical/human labor etc.) practically no new orchards have been planted since then.

Table 3: Fruit yield/capita (kg) and mean fruit consumption/capita in Romania between 1927-1999

Year	1927	1938	1950	1960	1970	1980	1990	1999
Yield/capita – kg	72.6	87.0	25.0	46.9	57.9	63.8	66.9	40.5
Consumption/capita- kg	38.0	40.0	20.7	30.3	34.6	37.2	59.9	35.7
% of yield consumed	52.3	46.0	82.8	64.6	59.8	58.3	89.5	88.2

Total fruit yield witnessed the same dramatic falls during the last decade of the 20th century, in 1999 being registered one of the lowest total fruit yield in the modern history of Romanian fruit growing (922,300 t). Again the structure of species becomes totally unfavourable, plums representing a share of the total fruit yield equal to that of apples and pears together.

According to the accepted norms on the optimal requirements for fruit in human consumption (85-95 kg/capita out of which 62 kg/capita should be represented by temperate fruits), it can be concluded that the current areas grown to fruit trees should plentifully provide all the necessary quantities. In other words, there should be no need for expanding the total fruit area, but only to replace the old and ruined orchards and increase the mean yield at least to the level of 10,000 kg/ha. This would mean an average fruit yield/capita of about 100 kg which would permit a fruit consumption/capita close to 75 kg and still remaining a third of this yield to be exported.

On the other hand, the descending trend of areas grown to fruit trees is expected to persist for the next 5-10 years (more and more state properties are claimed by their former owners) and no real possibilities of replacing these lost orchards with new ones are foreseen in the near future. This suggests that the increase of mean fruit yield should be much higher than the discussed level of 10,000 kg/ha. Considering the biological potential of new (and old)

fruit varieties, a significant increase of mean fruit yield could be attained simply by applying adequate technologies to the existing commercial (and noncommercial) orchards. The Prospective Plans of the Romanian Ministry of Agriculture, Waters and Forestry has already stated these directions for the reconstruction of the country's fruit growing sector but it remains to be seen if the government will be able (and willing) to allocate the rather high financial means needed to fulfil these objectives.

## CONCLUSION

In Romania, fruit growing has an old and rich tradition, plums being the fruit species which produced 90% (1932) to 39.5% (1999) of the total fruit yield.

The fluctuation of areas grown to fruit trees and of total fruit yields, in the 20th century, are due to political, social and economical realities of each period of time, to the various climatic conditions from year to year and to a rather slow development of commercial technologies.

The new fruit varieties created in Romania in the last three decades, together with some of the old imported varieties, constitute a valuable varietal assortment. Unfortunately, the financial and technical means, to largely spread these cultivars in new industrial plantation, are extremely limited for the time being.

The present areas grown to fruit trees (242,000 ha) could produce the necessary quantities of fruit for a rational human consumption/capita and a profitable export, provided adequate technologies were applied to the commercial (and noncommercial) orchards.

Serious financial and technical contributions are expected from the Romanian Government in order to create opportunities for planting new orchards and to facilitate the application of modern technologies in all fruit plantations of the country.

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