

# DEVELOPMENT AND TREND OF FRUIT GROWING IN MOLDOVA REPUBLIC

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**Abstract.** *In the period 1986 – 2006, essential changes took place in the fruit growing of the Republic of Moldova, both concerning the cultivated surface and the total production of fruits. Therefore the fruit growing inheritance surface was reduced from 251 thousands ha in 1993, to 111,8 thousands ha in 2006. At the same time, the importance of fruit growing plantations from the private sector increased from 20% to 52,3% in 2005. The production of fruit decreased drastically, from 1,09 million tons in 1993 to 0,37 million tons in 2006. The authors intended to emphasize the situation of the Republic of Moldova's fruit growing and the measures for increasing the plantations productivity.*

**Key words:** *fruit growing, productivity, plantation, harvest.*

## INTRODUCTION

In its evolution fruit growing has passed many stages, among which the modification of ratio between state property and private one, in the favor of the private property. It is sufficient to mention that the area of fruit growing plantations has been greatly reduced. From 251 thousand ha in 1993 it diminished to 111,8 thousand ha in 2006. At the same time, the fruit total production has followed the same sense in 2006 were obtained 716,6 thousand tons less than in 1993. Having these realities in view the author sets himself the to evidence some aspect referring to fruit growing development in the context of the unprecedented reduction of productivity of orchards that have not yet been cut clear and foundation of new intensive and super intensive orchards.

## MATERIALS AND METHODS

The study refers to the period 1986-2006 and aims at the evolution of principal indexes achieved in the fruit growing of the Moldova Republic such as: development of fruit growing plantation area; development of canceled, of the cut clear areas and of those planted with trees, bush fruits and strawberry; evolution of fruit growing plantations productivity and of the total production by species; modalities of turning fruits to good account; production evolution and average annual fruit consumption and of fruit products per capita.

## RESULTS AND DISCUSSIONS

Extension of fruit growing plantations area till 1993 was ascent, reaching 251 thousand ha, and the total production of fruits reached an average level of one million tons (Table 1). Statistic data confirm the reduction of fruit growing plantations area of 2.2 times. The area of the fruitful orchards until 1993 increased and constituted 173,5 thousand ha (69,1 % of the overall plantations).

It is reduced upwards of 60 in comparison with 1993 and constitutes 104 thousand ha in 2006. Practically the total orchards area (111,8 thousand ha) the Moldova Republic has equals to the fruitful orchards area. From statistic data results that while the cut clear areas had an ascendant tendency, the young, plantations traversed an inverse sense.

*Table 1*

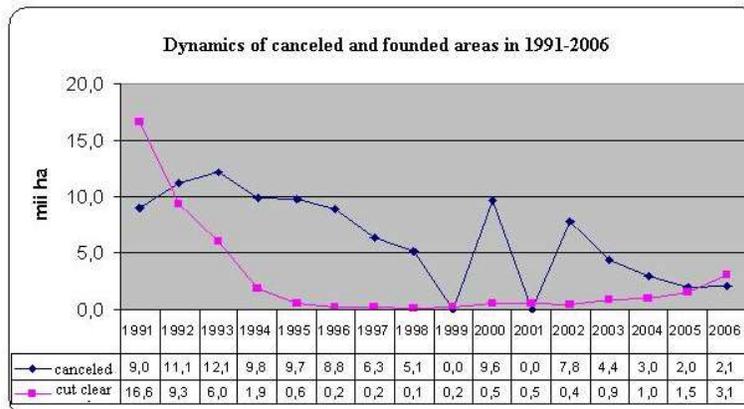
**Evolution of the cultivate area with trees and bush-fruits in the period of 1991 -2006**

Years	Fruit growing plantations area			Average harvest tons/ha	Total harvests of fruits		
	Total thousand ha	Inclusive fruitful			total, thousand tons	Inclusive in agro firms	
		mii ha	%			Thousand tons	%
1991	242,7	154,8	63,8	4,4	697,5	557,9	80,0
1992	241,8	159,5	65,9	3,1	506,2	395,4	70,4
1993	251,0	173,5	69,1	6,1	1087,8	818,8	75,3
1994	203,3	151,3	74,4	3,9	610,7	457,8	74,9
<b>1995</b>	<b>184,5</b>	<b>143,2</b>	<b>77,6</b>	<b>3,7</b>	<b>528,2</b>	<b>387,6</b>	<b>73,4</b>
1996	173,8	146,1	84,0	3,3	521,3	373,8	71,7
1997	165,2	149,4	90,4	6,3	946,0	714,9	75,5
1998	156,3	146,1	93,5	2,5	367,2	203,5	55,4
1999	151,5	141,1	93,1	1,6	220,0	42,7	19,4
<b>2000</b>	<b>136,6</b>	<b>129,0</b>	<b>94,4</b>	<b>2,0</b>	<b>255,4</b>	<b>126,2</b>	<b>49,4</b>
2001	122,0	118,0	96,7	2,7	315,0	138,7	44,0
2002	120,2	116,3	96,7	2,8	327,1	141,0	43,1
2003	114,3	108,0	94,4	5,7	617,2	319,8	51,8
2004	111,0	103,6	93,3	4,2	430,4	218,1	50,7
<b>2005</b>	<b>110,0</b>	<b>103,5</b>	<b>94,0</b>	<b>3,7</b>	<b>386,1</b>	<b>184,2</b>	<b>47,7</b>
2006*	111,8	104,0	93,0	3,6	371,2	165,0	44,4

Source: National Statistic Bureau; \* - preliminary data

For example, in the period 1996-2002 the cut clear were reaching 5,1-9,6 thousand ha annually, and only 200-500 ha were planted (Fig. ). Now the most part of the existent fruit growing plantations are in the period of drying, fruit-bearing and growing and are in a disastrous state with a small biologic potential with an exhausted period of exploitation and amortization and must be cut clear.

The average production per ha and the analyzed total harvest had an irregular evolution. It is sufficient to mention that during the last 16 years only three times (1993, 1997 and 2003) the average harvest of fruit growing plantations has overcome the level of 5 t/ha, and the total harvest only in 1993 reached the level of one million tons of fruits – as for the rest of years these indexes are in average at the level of 3-4 t/ha and 300-400 thousand tons of fruits that constitute the level of associated fruit growing productivity comprising the agropomiculture system and family gardens.



The fruit growing unsatisfactory state may be administered to repartition of fruit growing plantations area (65 %) on spots having an inclination from 3-5 up to 5-10 degrees, all being subjected to erosion processes. At the same time, a great negative influence on the fruit growing plantations state and their productivity was brought about by ignorance or negligent accomplishment of agro technical measures. Accordingly, the productivity of the existent orchards progressively diminishes, and especially have been reduced the total harvests that in turn has determined the fate of enterprises for processing and industrialization of fruits (1, 2, 3).

With transition from planned economy to the free, competitive one the structure of property has changed in the favor of private sector which in 2005 represents 59,2 % of the total area and 52,3 % of the total harvest of fruits in comparison with 20 % of total harvest of fruits in 1991 (Tables 1, 2). In 2005 the fruit growing plantations area constitutes 110 thousand ha, inclusively seed-bearing fruits – 68.7 thousand ha, stone fruits 36.7 thousand ha, nut trees – 3.7 thousand ha and bush – fruits and strawberry – 0.9 thousand ha. It is important the facts in the Moldova Republic apples are produced, on 60.8 % of areas under orchards, which produce 72.1 % of the total amount of fruit production. On the second place are prunes with 10.7 % of the total production of fruits, and the peach, nuts, sour cherries, sweet cherries and pears hold relatively modest quotas (Table 3).

*Table 2*

**Structure of cultivated area with fruit growing species in the Moldova Republic in the period 2000-2005 thousand/ha**

Specification	2000-2004	2005		
	average	total	Inclusive in agro firms	Ponderation (%) of area in agro firms
<b>Orchards, bacciferous plantations</b>	<b>120,8</b>	<b>110,0</b>	<b>44,9</b>	<b>40,8</b>
Inclusive: <b>Seed-bearing</b>	<b>76,2</b>	<b>68,7</b>	<b>30,9</b>	<b>44,9</b>
Of which: Apple-tree	74,2	66,9	30,6	45,7
Pear-tree	1,6	1,4	0,3	21,4
Quince	0,4	0,4	0,0	0,0

<b>Stone - fruits</b>	<b>39,6</b>	<b>36,7</b>	<b>12,9</b>	<b>35,1</b>
Of which: Sweet-cherry	2,7	2,4	0,8	33,3
Sour cherry	3,7	3,2	0,7	21,9
Prune	23,7	21,6	7,2	33,3
Apricot	2,4	2,4	0,7	29,2
Peach	7,6	7,0	3,5	50,0
<b>Nuts</b>	<b>3,4</b>	<b>3,7</b>	<b>0,7</b>	<b>18,9</b>
<b>Bush-fruits and strawberry</b>	<b>1,0</b>	<b>0,9</b>	<b>0,3</b>	<b>33,3</b>

Table 3

**Dynamics of the production amount of fruits and their structure in the aspect of cultivated species in the Moldova Republic**

Specification	2000-2004		2005		
	Average thousand tons	%	Total thousand tons	inclusive: agro firms	
				Thousand tons	%
<b>Fruits, berries and nuts</b>	<b>389,4</b>	<b>100,0</b>	<b>386,1</b>	<b>184,2</b>	<b>100,0</b>
inclusive: seed-bearing, total	<b>284,9</b>	<b>73,2</b>	<b>285,6</b>	<b>164,4</b>	<b>89,25</b>
Of which: apples	275,5	70,7	278,4	163,3	88,65
Pears	7,4	2,0	6,1	1,1	0,60
Quinces	2,0	0,5	1,1	0,0	0,00
<b>Stone-fruits, total</b>	<b>88,1</b>	<b>22,6</b>	<b>86,0</b>	<b>19,5</b>	<b>10,58</b>
Of which: Sweet cherries	7,8	2,0	7,6	0,7	0,38
Sour cherries	12,9	3,3	13,8	0,4	0,22
Apricots	6,2	1,6	5,2	0,2	0,11
Prunes	47,7	12,3	41,4	11,3	6,13
Peaches	13,3	3,4	16,9	6,9	3,74
<b>Nuts</b>	<b>12,6</b>	<b>3,2</b>	<b>13,4</b>	<b>0,1</b>	<b>0,06</b>
<b>Berries</b>	<b>3,7</b>	<b>1,0</b>	<b>2,2</b>	<b>0,2</b>	<b>0,11</b>

In the period 2001-2006 of the total production of fruits, 41.5% was destined to processing, 30.4 % was turned to good account in fresh state at home, and 28.1 % was exported in fresh state (Table 4). An important cause, which leads to diminishing of fruit export of the Moldova Republic was represented by the poor quality of fruits both from the point of aspect and mode of presentation, except some reduced amounts of apple, prune peach.

Table 4

**Evolution of production and turning to good account indexes of fruits in the period 2001-2006**

Specification	MU	1986-1990	2001	2002	2003	2004	2005	2006
Average production	tons/ha	7,3	2,7	2,8	5,7	4,2	3,7	3,6
Total harvest	thousand tons	1037,0	315,0	327,1	617,2	430,4	386,2	371,2
Export	thousand tons	450,0	25,7	41,9	164,4	188,2	164,3	102,9
Processing	thousand tons	320,0	155,3	172,0	306,3	144,8	136,1	104,3
Home market	thousand tons	267,0	134,0	113,2	146,5	97,4	85,8	164,0*

\*Note: Home market plus the deposited amounts for further turning to good account.

The total harvest of fruits and the annual average consumption of fruits per capita except 1993, 1997, 2003 and too almost an equal stand and a rather reduced one ( Table 5).

Table, 5

**Evolution of production and annual average consumption of fruits per capita, in the Moldova Republic, in the period 1993-2006**

Specification	Years							
	1993	1997	2001	2002	2003	2004	2005	2006
Annual production of fruits per capita, kg	248,6	216,0	93,2	96,7	182,5	127,3	114,3	109,8
Annual average consumption of fruits and fruits products, per capita, kg	-	-	75,4	43,8	114,0	81,7	55,7	69,4

The programme of the fruit growing development for the period 2003-2020 aims at the increase of fruits production, improvement of quality and of higher competitiveness. This programmer (5.6) forecasts that the areas occupied by orchards will reach 100 thousand ha up to the end of 2020, and the total harvest of fruits will reach one million tons in the period 2006 – 2020 (Table 6).

The stable development of fruit growing foresees the gradual displacement of exhausted orchards with ones of intensive and super intensive type having a productivity potential and quality of fruits of 1.3-1.5 times higher in comparison with the previous level on the basis of rational utilization of ecologic, biologic, technologic, economic resources characteristic for each sector of spot and fruit growing farm.

Table 6

**Orientativ dynamics of basic indexes regarding the fruit growing development in the Moldova Republic, in the period 2005 -2020 (thousand tons annually )**

Years	Total harvest	Export	Processing	Home market
2005-2010	628	200	330	98
2011-2015	870	250	380	240
2016-2020	980	300	440	240

In order increase the efficiency of existing plantations it is necessary to accomplish the census of orchards concomitantly with their productivity indexes. The obtained data will allow the development of a complex of measures for improvement of works in fruit growing, achievement of a more efficient productivity potential of plantations and the more rational utilization of land resources.

To stimulate the production of fruit growing planting material and foundation of fruit growing plantations (article 5 of the State Budget Law on 2007, No.348-XVI of November 23<sup>rd</sup>, 2006) it is distributed for administration and management 17 million lei and 3 million lei for stimulation of nut culture development (4).

Resources to support the production of fruit growing planting material (grafted trees) and foundation of fruit growing plantations except bush-fruits plantations and strawberries will be utilized for partial compensation of the production expenses of grafted trees in the licensed, tree nursery as well as the cost of the fruit growing planting material used for foundation of fruit growing plantations.

The right to partial compensation of the production expenses of fruit growing planting material and for foundation of fruit growing plantations may benefit the economic agents regardless of the type of property and legal form of organization, who have founded tree nurseries as well as those who have founded fruit growing plantations.

## CONCLUSIONS

In 2006 the fruit growing patrimony of the Moldova Republic has been diminished with 139.2 thousand ha, in comparison with 1993. Nowadays the orchards area constitutes 11.8 thousand ha of with seed-bearing 68.7 thousand ha, stone-fruits – 36.7 thousand ha, nuts-3.7 thousand ha, bacciferous-0.9 thousand ha.

The structure of fruit growing plantations is unsuitable, in the sense that fruitful plantations constitute 93 % and the most ponderation is detained by apple trees and prune trees while the pear trees, nut trees, apricot trees and other are cultivated on rather reduced areas.

The total production of the fruits was irregular and rather reduced, the quota being about 93.2-182.5 kg/per capita/annual, the annual average consumption of 73 kg/per capita.

The state development of fruit growing in perspective of 2020 requires investments worth 602 mln USA dollars which will be defrayed by the private sector, allocations from the state budget and foreign investments. The program also foresees the creation of a state fund for fruits production development in the Moldova Republic.

**Subventions are granted:** for production of fruit growing planting material (grafted trees) – in an amount of 20 thousand lei per one ha of field I area (bench grafting) or field II (bud grafting); for foundation, beginning with autumn 2006, of fruit growing plantations – in an amount of 10 thousand lei per ha of planted area with seed-bearing species and in an amount of 7.5 thousand lei for an area of one ha planted worth stone-fruits species.

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