

## THE VITICULTURE AND WINEMAKING OF REPUBLIC OF MOLDOVA - PAST, PRESENT AND FUTURE

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### **Abstract**

*Viticulture and winemaking in Moldova has an important role in the national economy. These branches have an important share in the GDP. At this stage of viticulture and winemaking activity is regulated by Law of Vine and Wine (57/10.03.2006), government resolution on the approval of the restoration and development of viticulture and winemaking for the period 2002-2020 (1313/07.10.2002) and other regulations. In the period until 2006 the branch has a rapid growth, and stagnation occurred as a result of the embargo imposed by Russia. At present, the vineyard area is about 100 000 ha.*

**Key words:** Republic of Moldova, viticulture, winemaking industry.

### **INTRODUCTION**

Viticulture and winemaking in Moldova are the main sectors of agriculture. The favorable climatic conditions of Moldova, provide an opportunity to successfully cultivate grapes. The main activity of the villagers is cultivation of table grapes and grapes for processing. For many years' viticulture and winemaking was subjected to many tests under the influence of various factors-political, economic, social, etc. At this stage of viticulture and winemaking activity is regulated by Law of Vine and Wine (57/10.03.2006), government resolution on the approval of the restoration and development of viticulture and winemaking for the period 2002-2020 (1313/07.10.2002) and other regulations. The aim of our research was to study the dynamics of development and the state of viticulture and winemaking at this stage and the level of their development in according to the program.

### **MATERIALS AND METHODS**

In our study, about the situation of viticulture and winemaking, we used the data of the National Statistical Department and the

Ministry of Agriculture and Food Industry of Republic of Moldova. Also we used normative and legislative acts of the parliament and government of Moldova, the specialized literature.

### **RESULTS AND DISCUSSIONS**

The state of viticulture and winemaking at this stage is characterized by the following data.

The data from figure 1 showed that from 1991 to 2011, the total area of vineyards has decreased significantly from 176 thousand ha to 102 thousand ha, and the area of productive vineyards decreased from 148 thousand hectares to 92 thousand hectares.

In the period from 2002 to 2006 the area of vineyards has been stable, about 108-110 thousand hectares. This is due to GD 1313/2002 on the restoration of viticulture and winemaking for the period 2002-2020. After 2006, the vineyard's area decreased, this situation was associated with the embargo for wine from Russia, the largest market for products.

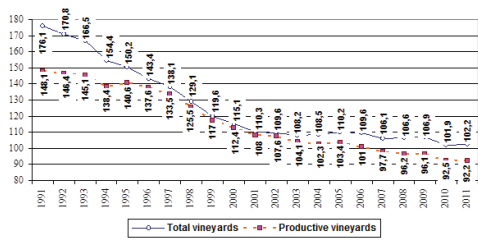


Figure 1. Dynamics of the total and productive area of vineyards in the Republic of Moldova during 1991-2011 years, thousand ha (Nicolaescu et al., 2010; Corobca et al., 2012)

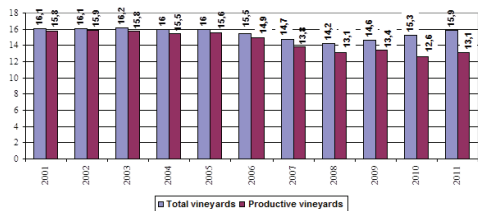


Figure 2. Dynamics of the total, processed and grapes production in the Republic of Moldova during 1991-2011 years, thousand t. (Nicolaescu et al., 2010; Corobca et al., 2012)

The data from figure 2 showed that from 2001 to 2011, the total area of table grapes vineyards has been stable, about 15-16 thousand hectares. After that, from 2006 to 2009, the vineyard's area decreased, this situation was associated with the embargo for wine from Russia, the largest market for products. In recent years, the situation has improved.

The data from figure 3 showed that from 1991 to 2011, the production has decreased significantly from about 600 thousand tons (total production in 1991) to 350 thousand ha (the same indices in 2011). The similar situation observed for the quantity of processed grapes in this period, but the table grapes production in the period from 2001 to 2011 years has between about 30 thousand tons (in 2006) and about 77 thousand tons (in 2004). The production decrease was due to the

decrease of the area of vineyards and the nonhomogeneous weather conditions. The weather conditions influenced the production per hectares (next figures).

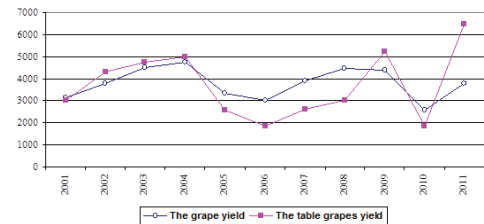


Figure 3. Dynamics of the grape yield in the Republic of Moldova during 2001-2011 years, kg/ha. (Nicolaescu et al., 2010; Corobca et al., 2012)

The data from figure 4 showed that the yield was nonhomogeneous. They was to influenced by the nonhomogeneous weather conditions.

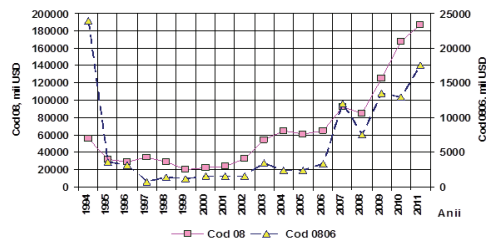


Figure 4. Dynamics of the grapes export from the Republic of Moldova during 1994-2011 years, thousand USD. (Nicolaescu et al., 2010)

The source of information:

<http://comtrade.un.org>

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:282:0001:0912:RO:PDF>

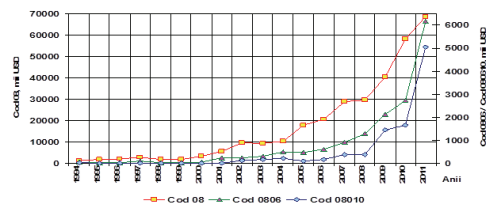


Figure 5. Dynamics of the grapes import in the Republic of Moldova during 1994-2011 years, thousand USD. (Nicolaescu et al., 2010)

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<http://comtrade.un.org>

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Analyzing the dynamics of the total value of export of fruits (code 08) and fresh and dried grapes (code 0806), according to UN database, we can say with certainty that until 1999 these indices were in a continuous decline and since 2000 there has been a considerable increase in export value (fig. 5). Minimum export of total fruits (code 08), was in 1999 and constituted 20.1 million USD and the maximum value of exports was in 2011 and amounted to 187 million USD. Minimum export of fresh and dried grapes (code 0806), were in 1997 and constituted 0.7 million USD and the maximum value of exports was in 1994 about 24 million USD. Export value in 2011 was 17.6 million USD, or 25.1 times more than the year 1997 and 1.4 times less than in 1994. Also in 2011, the export value of grapes (code 0806), in export value of fruit structure (code 08) was 9.39% (Figure 5).

The dynamics of import value (Figure 6) compared to the exports in the period 1994-1999 was relatively stable and in 2000 there is also a considerable increase. In 2011, the imports of fruit in general (code 08) was about 68.4 million dollars, or 57 times more than the year 1994. The trade balance was positive-118.6 million USD for export.

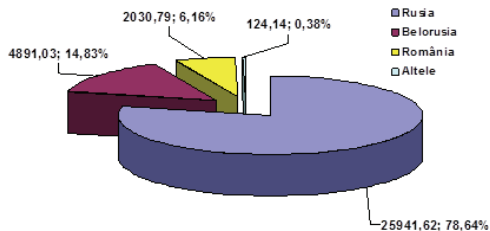


Figure 6. The structure of export of table grapes from the Republic of Moldova in 2011, tones,%. (Nicolaescu et al., 2010)

*The source of information:*

<http://comtrade.un.org>;  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:282:0001:0912:RO:PDF>

The grapes import value (code 0806) in 2011 was 6.2 million USD or 155 times more than in 1994. In the structure of grape fruit import value has returned 9.1%. The trade balance was positive this 11.4 million USD for export. Fresh grapes (code 080610) registered import value of 5.0 million USD or 166.7 times more

than the year 1994. However, the import value of fresh grapes in the total structure of the grapes (code 0806) was 80.62%, 18.38% for raisins. Trade balance in terms of fresh grapes in 2011 was positive by 12.6 million USD for export.

In the structure of exports of table grapes (code 0806) in 2011, the share of 78.64% or 25,941.62 tons refers to Russia, which is followed by Belarus with 14.83% or 4891.03 tons and Romania with 6.16% or 2030.79 tons (Figure 7).

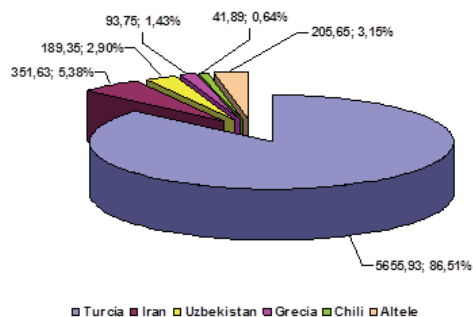


Figure 7. The structure of import of table grapes in the Republic of Moldova in 2011, tones,%. (Nicolaescu et al., 2010)

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In the structure of imports of table grapes (code 0806) in 2011, the share of 86.51% or 5655.93 tons is refers Turkey, which is followed by Iran-by 5.38% or 351.63 tons, Uzbekistan-with 2.90% or 189.35, Greece-by 1.43% or 93.75 tonnes and Chile-0.64% or 41.89 tons (Figure 8).

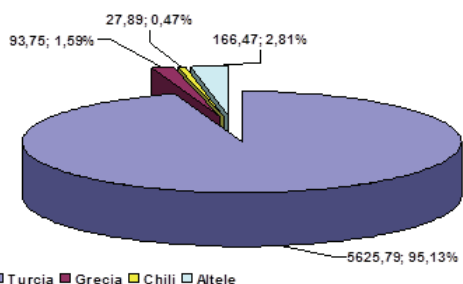


Figure 8. The structure of import of fresh table grapes in the Republic of Moldova in 2011, tones,%. (Nicolaescu et al., 2010)

The source of information:

<http://comtrade.un.org;>

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:282:0001:0912:RO:PDF>

In the structure of imports of fresh grapes (code 080610), in 2011, the share of 95.13% or 5655.93 tons is refers to Turkey, which is followed by Greece-by 1.59% or 93.75 tonnes and Chile-0.47% or 27.89 tons (Figure 9).

Wine branch is a branch of Agro-Industrial Complex that provides people with fresh and processed production: juices, jams and various types of wines. The food's importance, economic importance, it has the advantage that in comparison with others. According to scientific research of medicine, annual consumption calculation time a person is 40-50 kg grapes per year and approx. 40-50 it coming.

Grape production in calculating per capita in the period 2006-2009, varies between 130 kg (2006) and 192 kg (2009) and of the mass: 8.16 kg (2006) and 29.24 kg (2009).

Based on the data presented in Table 1, we find that the production of table grapes in Moldova in calculating per capita in 2006 is 18.13% of normal consumption, increasing to 64.99% in 2009 compared to the norm of consumption.

The results obtained show that local producers can not cover domestic consumption of fresh grapes. However, we find that the production of wine in Moldova in computing per capita in 2006 is 26.90% of normal consumption, falling by 16.51% in 2009 compared to the norm of consumption.

Table 1. The dynamics of production of grapes and wine production in Moldova in calculating the per capita (Nicolaescu et al., 2010)

Indices	2006	2007	2008	2009
1. Grape production in the calculation per capita, kg	<u>130</u>	<u>167</u>	<u>178</u>	<u>192</u>
-in% in comparison with last year	x	128,46	106,59	107,87
-in% in comparison with scientific annual consumption	288,89	371,11	395,56	426,67
2. The table grape production in the calculation per capita, kg	<u>8,16</u>	<u>10,55</u>	<u>11,68</u>	<u>29,24</u>
-in% in comparison with last year	x	129,27	110,77	250,37
-in% in comparison with scientific annual consumption	18,13	23,43	25,96	64,99
3. Wine production in the calculation per capita, l	<u>12,10</u>	<u>9,58</u>	<u>9,57</u>	<u>7,43</u>
-in% in comparison with last year	x	79,16	99,85	77,65
-in% in comparison with scientific annual consumption	26,90	21,29	21,26	16,51

Analyzing coverage of consumer standard table grapes (Table 1.) We can say that Moldova is unable to produce the required amount of grapes according to the norm of consumption.

At present in force 'Program restoration and development of viticulture and winemaking in the years 2002-2020', which was approved to restore the complex in the branches of viticulture and winemaking by the Governmental Decision no. 1313 / 07.10.2002 (Monitorul oficial 142 / 17.10.2002, art. 1448).

Given the current state of the industry, production capacity and level of business development of enterprises at that time, were projected production following wines:

Table 2. Indicative data on volumes of production of wine products and their value (in comparable prices of 2000) in the 2002-2020 years

Type of wines	Unit of measure	Years													
		2000				2010				2015			2020		
		Quantity	Price, MDL/unit	Sum		Quantity	Sum		Quantity	Sum		Quantity	Sum		
				mil. MDL	mil. Euro		mil. MDL	mil. Euro		mil. MDL	mil. Euro		mil. MDL	mil. Euro	
Bottled wines	1000 hl	750	896	672	50,27	1000	896	67,02	1100	986	73,76	1500	1.344	100,53	
Wines in bulk, sparkling wine	1000 hl	850	320	272	20,35	900	288	21,54	1000	320	23,94	1500	480	35,91	
Total:		16		944	70,61	19	1184	88,57	21	1.306	97,69	30	1824	136,44	
Sparkling wine	1000 bottles	5,5	10	55	4,11	8,5	85	6,36	10	100	7,48	12	120	8,98	
	1000 hl	41,3	1333	55	4,11	63,8	85	6,36	75	100	7,48	90	120	8,98	
Divin (cognac)	1000 hl	41,6	4000	166	12,42	40	160	11,97	50	200	14,96	60	240	17,95	
Brendy	1000 hl	95,5	1660	153	11,44	100	160	11,97	120	192	14,36	140	224	16,76	
Production value-total (million MDL)				1318	98,59		1589	118,86		1798	134,50		2408	180,12	
in% in comparison with 2000				100			121			136			183		

The level of achievement of planned objectives will be revealed in later chapters. To obtain that quantity of wine products necessary to process the following quantities of grapes and wines.

Table 3. Indicative data on volumes of grape processing and use directions of wine obtained in the 2002-2020 years

Indices	Unit of measure	Years				
		1990 (for reference)	2000 (real data)	2010	2015	2020
Grape processing	1000 tones	770	360	360	430	600
Production of raw wines including	1000 hl	5.200	2.400	2.400	2.800	3.900
---for wines	1000 hl	4.200	1.870	1.500	1.700	2.600
---for sparkling	1000 hl	500	470	500	500	500
---for divinuri (cognac)	1000 hl	300	30	300	400	500
---for grape juice	1000 hl	200	30	100	200	300

Considering the pedoclimatic potential of Moldova in terms of the culture of the vine, and the objectives set for achieving certain amounts of wines, the area of vineyards of the commodity producing grapes at the end of that period should be approx. 100 000 hectares, of which the productive-approx. 80 000 hectares. The area of vineyards per wine regions should be distributed as follows: South wine region (Cahul)-48 000 hectares, the wine region of Centre-48 000 hectares and wine region North (Balti)-4 000 hectares.

Table 4. Indicative data on the development of viticulture in the commodity producing grapes from 2002-2020

Years	Annual average				Total area, thousand ha		Necessary quantity of planting material, million pcs
	Total area, thousand ha	Productive area, thousand ha	Total production, thousand tones	Yield, kg/ha	designed deforestation	planting area	
2002-2005 including 2005*	99,6	95,2	434,2	4.560	22,5	9,2	32,2
2006-2010 including 2010*	94,2	85,5	393,0	4.600	6,0	4,5	15,75
2011-2015 including 2015*	94,2	66,2	460,0	6.950	6,0	7,0	24,5
2016-2020 including 2020*	100,0	80,0	640,0	8.000	4,0	5,0	17,5

Also it requires the existence of vineyards to produce wines with designation of origin, given the unique climatic conditions favourable for vines. The area of these plantations should be approx. 5000 hectares.

The level of program implementation can easily see from Figure 9, but the establishment of vineyards in the years 2008-2009 was performed at a lower level compared to planned programme. This, in our opinion, is due to stress growers as a result of the embargo imposed by the Russian Federation.

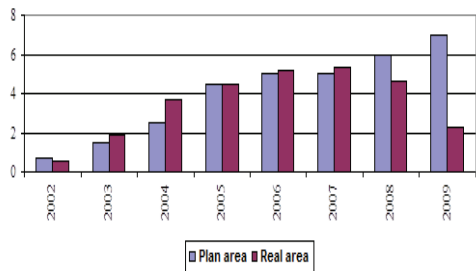


Figure 9. The dynamics of vineyard

During the years, the global production of grapes and quantity processed by the processing enterprises varies very widely. This is due largely to climatic conditions that are created in the geographical territory of the Republic of Moldova.

The decisive and destructive climatic factors which influencing the successful development of viticulture and their intensify in recent years this is the winter frosts, late spring frosts, hail in the early stages of growth, prolonged summer droughts (flowering and berry growth), autumn rains (berry maturation) and early autumn frosts.

## CONCLUSIONS

During the years, the total area of vineyards, the global production of grapes and quantity processed by the processing enterprises varies very widely. This is due largely to climatic conditions that are created in the geographical territory of the Republic of Moldova.

The decisive and destructive climatic factors which influencing the successful development of viticulture and their intensify in recent years

this is the winter frosts, late spring frosts, hail in the early stages of growth, prolonged summer droughts, autumn rains and early autumn frosts.

To improve the efficiency of viticulture and wine-making is necessary to raise the level of technology of vineyards, perform the intended purpose of the program development, and to develop new markets for grapes and wines.

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