

TABLE GRAPEVINE ASSORTMENT IN REPUBLIC OF MOLDOVA: ACTUAL SITUATION AND PERSPECTIVES FOR AMELIORATION

SORTIMENTUL DE STRUGURI PENTRU MASĂ ÎN REPUBLICA MOLDOVA: SITUAȚIA ACTUALĂ ȘI PERSPECTIVA DE AMELIORARE

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Abstract. *The analysis of assortment of table grapevine, preponderantly created in the Republic of Moldova is presented and the perspective of potential for the export of grapes is examined. A distinctive feature of these varieties, obtained in the result of breeding program initiated in the seventies of preceding century, is relative or increased resistance to unfavorable factors of environment, inclusive to winter conditions characteristic for the viticulture zone. For future harmonization of actual assortment are proposed new varieties, inclusive seedless, destined to complete the insufficiently represented groups of maturity of berry, especially with colored berries for extra-early and early groups, but also the later group with grapes long-term storage. At the same time is ascertained creation and presence on the market of impressive diversity of the table grape varieties originated from Ukraine and Russia, also with increased resistance to unfavorable factors, the result of collaboration between scientific institutions and private sector.*

Key words: grapevine, table grape, seedless varieties, resistance

Rezumat. *Este prezentată analiza sortimentului de struguri pentru masă, preponderent creat în Republica Moldova și examinată perspectiva potențialului de export al strugurilor. O trăsătură distinctivă a acestor soiuri, obținute în urma realizării unui program de ameliorare inițiat în anii 70 ai secolului trecut, este rezistența lor relativă sau avansată la factorii nefavorabili ai mediului ambiant, inclusiv la condițiile de iernare specifice zonei noastre viticole. În scopul armonizării sortimentului actual sunt propuse soiuri noi, inclusiv apirene, menite să completeze epocile de maturarea reprezentate cu un număr insuficient de soiuri, în special cu bobul colorat pentru epocile extratimpurie și timpurie, dar și cea târzie, cu struguri destinați păstrării. Totodată, se constată crearea și prezența pe piață a unei varietăți impunătoare de soiuri cu struguri pentru masă, provenite din Ucraina și Rusia, de asemenea cu rezistență avansată la factorii defavorabili, rezultatul conlucrării instituțiilor de cercetare cu sectorul privat.*

Cuvinte cheie: viță de vie, struguri pentru masă, soiuri apirene, rezistență

INTRODUCTION

According the OIV statistics (Structure of the world vitivinicultural industry in 2007) in 2007 global production of grape for fresh use (table grapes) was about 200 Mqx (millions of quintals) or 30% from global grape production. Is

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established an impressionable increasing of this index – by 48,7% in comparison with the mean value of global table grape production in the period 1996-2000. At the same time human fresh grape consumption in 2007 was 194,1 Mqx or an increasing by 45,8% in comparison with the mean value of table grape consumption for the same reference period. The production of table grapes in Republic of Moldova in 2007 was 1,3 Mqx, that is double in comparison with the mean value of global table grape production in the period 1991-1995 and an increasing by 43% in comparison with the mean value for the period 1996-2000. The consumption of fresh grapes in republic in 2007 was 950 mqx (thousands of quintals), or an increasing by about 50% in comparison with the mean for 2006.

Therefore, in conditions of a permanently increasing of global table grape production and the maintenance of tendency of increasing of import of grapes for fresh consumption, inclusive in Europe, the modernization and development of this sector in Republic of Moldova is an actual objective with strategic importance. Along with the required managerial procedures in this direction, the chances for expansion to external markets, competitiveness of branch in whole, first of all is determined by presented grapevine assortment and strategy for his modernization. Throughout will be analyzed actual table grapevine assortment in republic of Moldova and the perspectives for his amelioration.

MATERIAL AND METHOD

In the paper is analyzed a part of table grapevine varieties admitted, according the Register of Plant varieties (Registrul, 2010), for cultivation in Republic of Moldova. Initial data concerning some agrobiological characteristics of varieties were accumulated according the accepted methodology for description of varieties submitted in State Commission for Crop Variety Testing. On analysis of suitability of varieties for the export of grapes were examined current Standards of EU and USA (Marketing Standard, 2008; United States Standard, 1999).

RESULTS AND DISCUSSIONS

Utilization of accumulated in Institute's Genofond grapevine biodiversity in the frame of program of genetic amelioration of assortment, initiated in the early seventies of past century, contributed to creation and homologation of a whole number of new grapevine varieties for various use with increased resistance to unfavorable factors of environment. Until the 1980 assortment for table grape included only one autochthonous variety – Coarnă neagră, remainder being the varieties of various origin, in majority classic varieties. Beginning from 1980 the table grapevine assortment was permanently completed with new creation resulted from this program.

Actually, from total number of 35 table grapevine varieties included in Register (Registrul, 2010), 21 varieties (60%) are local creations (table 1). For 12 varieties were obtained Patents for Plant Variety.

By the color of the berry predominates the varieties with green-yellow berries that are relatively uniform distributed in all groups of physiological

maturity of the berry (figure 1, a). Varieties with coloured berries (in range from rose to black) are more frequently in groups with middle-late maturity.

Table 1

Agrobiological characters of homologated table grapevine varieties create in Republic of Moldova (Tuțuc et al., 1998; Savin et al., 2007)

Name of variety	Bunch weight, g	Berry weight, g	Berry size, mm	Time of maturity of berry	Resistance to frosts
Varieties with green-yellow berry					
Alb de Suruceni**	250-400	6-8	22 x 19	06 (25.IX)	-24°C
Avgustovschii	200-300	3-4	16 x 15	01 (10.VIII)	-26°C
Frumoasa albă**	350-550	6-8	26 x 24	05 (20.IX)	-23°C
Guzun	400-500	4-5	26 x 20	06 (25.IX)	-24°C
Ialovenscii ustoicivâi	400-500	6-8	28 x 23	07 (05.X)	-23°C
Iubilei Juravelea**	400-500	5-7	25 x 26	06 (05.X)	-24°C
Leana**	350-500	4-6	22 x 18	05 (20.IX)	-22°C
Mărgăritar	350-500	6-7	27 x 22	03 (05.IX)	-24°C
Muscat iantarnâi	130-240	2-3	19 x 17	01 (20.VIII)	-18°C
Muscat timpuriu	250-400	6-7	28 x 22	01 (10.VIII)	-23°C
Startovâi	400-500	5-6	23 x 20	05 (15.IX)	-24°C
Varieties with black berry					
Codreanca**	400-500	6-7	31 x 19	03 (15.VIII)	-22°C
Moldova**	320-500	5-6	24 x 19	06 (25.IX)	-22°C
Muscat de Bugeac**	300-350	3-4	21 x 18	06 (25.IX)	-22°C
Osennii ciornâi	450-600	6-8	27 x 22	06 (25.IX)	-23°C
Seedless varieties					
Apiren alb**	270-780	2-3	20 x 18	03 (01.IX)	-22°C
Apiren roz**	256-610	3-5	24 x 22	03 (25.VIII)	-22°C
Apiren negru de Grozești**	200-370	1-2	14 x 11	04 (10.IX)	-24°C
Kiș-miș lucistâi**	500-600	3-4	22 x 17	03 (20.VIII)	-20°C
Kiș-miș moldovenesc**	400-600	5-6	23 x 18	06 (25.IX)	-20°C

*) – time of full maturity of berry: code according the Register of Plant varieties (2010) and date after with is attested maturity of berry

**) – for these varieties the Patent for Plant Varieties was obtained

Must be accentuated the inclusion in assortment, beginning with 1988 of created in Republic of Moldova seedless grapevine varieties, that represent a novelty for the republic. Considering the advanced resistance to unfavorable conditions of environment, some of these varieties represent a novelty for our entire viticulture zone (Savin et al., 2007). These varieties diversify and complement, first of all, varietal conveyor for grapes for fresh consumption. By preliminary investigations were established the possibility to use the grape in technological processing in order to obtain must, juice, compote, marinade, jam, raisins and wine.

In the group with early maturity of berry are presented varieties Augustovschii, Muscat timpuriu, Muscat iantarnâi, Perla de Csaba and Muscat jecmijnâi. We note the absence in this group both of seedless varieties and of varieties with colored berry.

The more numerically and relatively well represented by all categories of varieties, inclusive seedless, is the group with early maturity of grape (group 03). It includes the varieties Augustovschii, Muscat timpuriu, Muscat iantarnâi, Perla de Csaba and Muscat jemcijnâi et al.

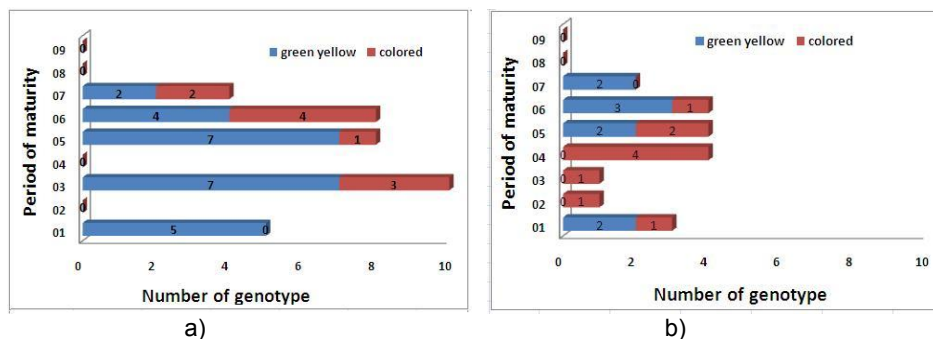


Fig. 1 - Repartition of varieties by time of berry maturity: a) homologated varieties; b) perspective varieties

For the group of varieties with middle time of maturity of berry, that includes the varieties Chasselas d'ore, Chasselas mousque, Chasselas rose, Frumoasa albă, Leana and Startovâi – with green-yellow berries and Romulus and Apiren negru de Grozesti – seedless varieties, can be noted the absence of varieties with colored berry and the fact that seedless varieties a preponderantly destined for technological processing.

With the exception of introduced variety Zolotistâi ustoicivâi, in the group with medium-late time of maturity of berry are included only autochthonous varieties - Alb de Suruceni, Guzun, Moldova, Muscat de Bugeac, Osenii ciornâi and seedless variety Kiş-miş moldovenesc. The group with late maturity of berries is not numerous – Ialovenshii ustoicivâi and Karaburnu with green-yellow berries and Coarnă neagră and Muscat de Hamburg with black berries.

At the same time are in process of evaluation a number of new created varieties and elites (Table 2), destined to complement current assortment. First of all these varieties are destined to increase the number of varieties in the groups of maturity less of all represented, inclusive with colored berry (Figure 1, b).

For the group with early maturity of berries are proposed 5 new varieties and elites, inclusive Marta, Zviozdnâi ustoicivâi and one seedless variety with extra-early time of maturity of berry (Apiren roz extratimpuriu).

Perspective varieties and elites can also complement the group with early-middle and middle time of maturity of berry (Straşenshii, Vieru-59, Basarabia, Apiren roz Basarabean and so) and with middle-late and late time of maturity of berry (Gen Vierul, Gagarin, I-5-58 and so).

In order to evaluate the export potential of grapes, both for homologated assortment and perspective varieties and elites, were considered a number of criteria according the Commercial Standards for table grapes. Standard in force for European Union (Marketing Standard, 2008) stipulates three category of quality for table grapevine destined for sale (market), the main criterion being the

minimum accepted weight of bunch: class “Extra” – 210 grams, class I – 150 g and class II – 100 g. For the grapes considered with little berry minimum accepted weight of bunch is 150, 100 and 75 grams respectively. Special remarks concerning the admissible size of berry are not presented.

Table 2

Agrobiological characters of perspective table grapevine varieties created in Republic of Moldova (fragment)

Name of variety	Bunch weight, g	Berry weight, g	Berry size, mm	Time of maturity of berry	Resistance to frosts
Varieties with green-yellow or rose berry					
Gagarin	400-600	5-7	29 x 23	05 (16.IX)	-24°C
Zviozdnâi ustoicivâi	350-500	5-8	24 x 23	01 (15.VIII)	-21°C
Tighin	350-500	5-6	32 x 25	06 (25.IX)	-24°C
I-5-58	470-820	5-7	33 x 30	07 (01.X)	-23°C
Varieties with black berry					
Marta	400-650	5-7	29 x 24	03 (20.VIII)	-23°C
Straşenscii	600-900	7-9	28 x 25	04 (05.IX)	-21°C
Vierul 59	350-500	6-8	36 x 20	05 (15.IX)	-23°C
Gen Vierul	350-500	6-8	30 x 20	06 (01.X)	-23°C
Basarabia	385-570	3-4	32 x 31	04 (10.IX)	-22°C
Seedless varieties					
Apiren roz extratimpuriu	200-350	1-2	16 x 14	01 (25.VII)	-24°C
Apiren roz Basarabean	250-400	1-2	14 x 12	04 (05.IX)	-24°C

USA Standard in force (United States Standards, 1999) includes 6 grades of quality, two of them are for the export of grapes – “U.S. Extra Fancy Export” and “U.S. Extra Export”. Are specified unique requirement concerning minimal weight of bunch – 226,8 grams also the restrictions concerning the size of berry. The bunches for category “U.S. Extra Fancy Export” must have the berry not less than 20,6 mm in diameter for varieties Cardinal, Robin, Italia Muscat and other similar varieties and 17,5 mm in diameter for seedless varieties and other varieties not included in these two groups. For category “U.S. Extra Export” the size of berry must be not less than 19,1 mm and 15,9 mm respectively.

Refer to the assortment of table grape in Republic of Moldova (homologated and perspective), can be ascertained that by the weight of bunch, even in the case of varieties considered with small-middle berry, all presented varieties can be assigned to the class “Extra” (according EU Standard) or to the class “U.S. Extra Fancy Export” (according USA Standard). Also by the size of berry the majority of varieties satisfy the standards.

During the last 15-20 years, in the result of collaboration of scientific institutions and private sector were created and launched of the markets of Russia and Ukraine an impressive diversity of varieties for table grapes with advanced resistance to unfavorable factors of environment, with divers colors and size of berries. In creation of these varieties must be accentuated a wide utilization of varieties created in Republic of Moldova. The varieties Arkadia rozovaia, Arkadia (Moldova x Cardinal), Argo (ZOS-1 x Codreanca), Gala (Podarok Zaporozhiu x

Codreanca), Antonii Velikii, Balet, Blagovest, Victor, Kiş-miş Nahodka (Talisman x Kiş-miş lucistâi), Prometei (Arkadia x Kiş-miş lucistâi) represent only a little fragment from existing ones. Some of these varieties were temporary admitted for testing in production conditions in republic. Together with the direct utilization in production they represent an interest as initial material for pre-breeding and breeding programs (Savin et al., 2009).

CONCLUSIONS

1. Homologated varieties correspond to requirements of market and perspective ones have the potential for complementation, diversification of assortment for export. Majority of them have advanced resistance to winter conditions, need a limited number of chemical treatments.

2. All groups of maturity of berry are relatively uniformly represented in homologated assortment and perspective varieties and elites offer the possibility for its harmonization complementing intermediary group of maturity of berry, inclusive with varieties with colored berry, seedless varieties.

3. Medium- and long-term strategic purposes for continuing diversification of assortment presuppose elaboration and execution of scientific program for creation of new varieties with increased genetic resistance to unfavorable factors of environment prioritizing to the market demands: seedlessness; berry with crispy pulp; size of berry and bunch - medium-large; color of berry – rose, green-yellow, black; delicate, slightly perceptible aroma; suitable for transportation and long-term storage.

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