

AGROTECHNICS APPLIED TO VARIETIES OF TABLE GRAPES GROWN IN VINEYARD ȘTEFĂNEȘTI-ARGES

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Abstract

Table grapes should be a pleasant and appealing. This condition is crucial because the consumer considers the first "eye" size, shape and color of the grapes. The production of grapes, in addition to climatic conditions and variety cultivated has a decisive influence on applied agrotechnics plantation. Obtaining high yields of high quality and at a low cost price agrotechnical requires application of differentiated varieties. Necessity to replace the old table grape varieties in plantations established many years ago, with new varieties suitable for large productions and qualitative study resulted in the collection ampelographic of new varieties such as 'Argessis' and 'Golden Stefanesti', compared with varieties known 'Muscat Hamburg', 'Augusta'. The research in the present paper, started from the assumption that pruning represents the most important agrotechnical link in the culture technology of grapevine. The execution of correct working, in accordance with the variety and the culture conditions of the grapevine ensures the achievement of large, constant, high quality production every year. At INCDBH Ștefănești-Argeș, located in the vineyard Ștefănești-Argeș, researches on the aspects regarding the level of the crop load for the table grapes varieties have not been carried on before. To this effect, we have considered useful to undertake a study on this agrotechnical intervention for a better promotion of these varieties in production.

Key words: table grapes, consumer, quality, agrotechnics

INTRODUCTION

The latest years have recorded an important rise in the consumption of fresh grapes, due to a general tendency towards a healthy nutrition, rich in vegetal resources (Dejeu L., 2010, 2011). Grapes represent a medicine-fruit as they have high therapeutic qualities as well as the grapevine and the wine (Necula C et al., 2010; Petrescu E., 2002).

The confrontation of Romanian viticulture with the international one and mainly with the European one, is a current issue which obliges us achieve high quality products (Messegue M., 1998). As the Romanian market contains only few varieties with early maturation and pleasant commercial aspect, new varieties and clones meeting these requirements must be promoted. Such new varieties and clones have

been already cultivated in some plantations in the area Ștefănești-Argeș.

These are the newly homologated varieties: 'Argessis', 'Golden of Ștefănești', 'Muscat Adda 10 Șt'. The famous varieties cultivated in the area - 'Augusta' - can be added to the new cultivated varieties.

MATERIAL AND METHOD

The consumers' requirements, especially children and old people, for seedless grapes determine the obligatory extension of the seedless and other varieties in the viticulture of the countries having a warm or continental climate like Romania (Nicolaeescu Gh et al., 2007).

The newly created varieties, homologated during the latest years, but known only in the units where they had been obtained, will be set

into culture in order to replace some older varieties which do not meet the continuously changing qualitative requirements of consumers (Popa C., Necula C., 2003).

Settlement experiences bifactorial type 4x3 for each experimental year (2011-2013) was identical, taking into study two factors, namely: Factor A - variety, which included three graduations: 'Argessis', 'Golden Ștefănești', 'Muscat Adda 22 St.', 'Augusta'.

Factor B - fruit load applying differentiated cuts bearing vines that covered graduations: b1 fruit load of 15 eyes per vine with pruning spigots; b2 fruit load of 20 eyes per vine, with cutting to the heart; b3 fruit load 25 eye hub with cutting the string.

Observations and determinations have been made on the experimental plot located in the viticultural area of Muntenia (Ștefănești Argeș), as regards the quality of the table grapes under the pedoclimatic conditions of the Argeș zone. The grapevine plantation has a distance of de 2,2/1 m, the applied cutting is the Guyot type on semistock.

The table grapes have been harvested when their maturation ensures a superior and efficient capitalization (Costescu A., 2013; Messegue M., 1998). This has been set in general, according to the variety, when the grapes reached full maturity.

The moment of full maturity for the table grapes has been established by approximation, through performing the following determinations: the weight of the berries, the sugar content of the must and the titratable acidity.

These determinations have been made periodically, every 3-5 days, beginning with the ripening of the grapes.

In the production of grapes, besides pedoclimatic conditions and the cultivated variety, a decisive role is played by agrotechnics applied in plantation.

The obtaining of large high quality production at a low cost price imposes the application of an agrotechnics differentiated on varieties.

RESULTS AND DISCUSSIONS

The shorten description of varieties:

'Argessis' (Figure 1) - variety homologated in 2002 at SCDVV Ștefănești.

The first table grape variety obtained under the pedoclimatic conditions specific to the vineyard Ștefănești-Argeș.

Pleasant commercial aspect, large berry (7,5-8,0 g), ovoidal, bluish-black colour.

Large, uniaxial grape (450-480g). Good tolerance to cryptogamic diseases (mildew, blight, rot).

High vigor vines, suitable for arbor culture. Average production reaches 15 t/ha (Popa C., Necula C., 2003; Petrescu E., 2002).



Figure 1. Variety 'Argessis'

'Auriu de Ștefănești' (Figure 2) - the first grapevine variety for white table grapes, having a very early maturation, obtained under the pedoclimatic conditions specific to the vineyard Ștefănești-Argeș, homologated in 2007 at INCDBH Ștefănești.

Pleasant commercial aspect, large berry (5,5-6,8 g), globular, golden-yellow colour. Large grape (400-450 g), winged.

Good tolerance to cryptogamic diseases (mildew, blight, rot).

The maturation of grapes in phase I (28.07-05.08).

Suitable for ecological cultures.

Extension in culture of the variety ensures an average production of 14 t/ha (Popa C. et al., 2003).



Figure 2. Variety 'Auriu de Ștefănești'

'Muscat Adda 22 St.' (Figure 3) - has been obtained through clone selection from the variety 'Muscat d'Adda' at INCDBH Ștefănești and homologated in 2008; it is a variety destined for fresh consumption; the leaf is green; the grapes are medium sized, towards large (270-340 g); the berries are disposed equally on the cluster, being medium to large size; semicrisp pulp with specific taste and flavor; the skin is thick, black-aubergine coloured, highly bloomed; the vigor of the vines medium to large; it has good resistance to drought and diseases (mildew, blight and grey rot); the maturation of the grapes in September; a production of 4,9-5,3 kg/vine; it accumulates 187 g/l sugars and 3,9 g/l acidity; it has an increased resistance to handling, transport and storage (Necula C et al., 2010).



Figure 3. Variety 'Muscat d'Adda 22 Șt'.

'Augusta' (Figure 4) - it was obtained by controlled sexual hybridization Italy x Queen variety of vineyards, the Agronomic Institute in Bucharest. Variety approval was made in 1984. Required by earliness (II era of aging), size and look to the grapes.

At the rosette is starting in vegetation glabrous, green and brown shades, and young leaves are bronze. Adult leaf of medium size (16-18 cm long) and have fine grooves.

Autumn chords acquire a brown color - brown. Hermaphrodite flower normal guy May, variety is self-fertile.

Grapes are high (average 325g), conical and cylindrical-lacs. Berries large, oval, yellow-green, semicrisp flesh with pleasant flavor (Nicolaiescu Gh et al., 2007).

The research in this paper have assumed that cutting is the most important link in the technology culture Agronomic grape-vine.

Correct execution of works in accordance with the variety and growing conditions, ensuring

the achievement of high yields, consistent and quality from one year to another.

At INCDBH Ștefănești-Argeș, located in the vineyard Ștefănești-Argeș, research on issues related to establishing the level of load bearing table grape varieties created here, they have not been undertaken. In this respect it was considered useful to study the agro links to better promote further production of these varieties.

The production of grapes, in addition to climatic conditions and cultivated variety, has a decisive influence agricultural technique applied in the plantation. Achieve high yields of top quality and at a low cost price agrotechnical requires applying differentiated varieties.



Figure 4. Variety 'Augusta'

Shoot growth was recorded by variety, the load assigned to each block separately. The largest increases in shoots, regardless of year and fruit load were recorded 'Argessis' variety averaging 169 cm, followed by golden variety Ștefanesti (165 cm) and 'Muscat Adda 22 Șt'. (162 cm) and the smallest increases were recorded in variety 'Augusta' 159 cm (Figure 5).

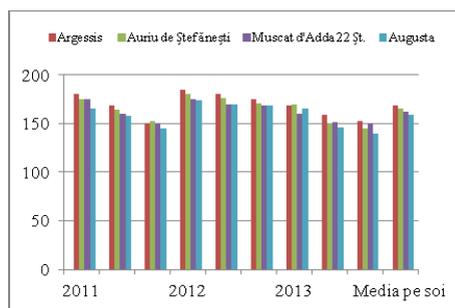


Figure 5. Shoot growth of the varieties (cm)

Analyzing the three variants and increases depending on the type of cut shoots was found

that the highest increases were registered in the drill-cutting versions of fruits, to those cutting the string, so the variety 'Argessis' version 15 eyes / stump sprouts increases were 180 cm and Golden variety Ștefănești the variant with 25 buds / vine, shoots increases were only 152 cm. In the three years of experimentation, 2011-2013, we found that leaf area per one cylinder varies within very wide limits between varieties because each variety is different vigor.

It was also found between study variation, climatic conditions of every individual year largely influencing the size of leaf area. Increased eye on the stump to dry pruning resulted thus increasing leaf area per vine, so that the highest values of leaf area were recorded in V3 (25 eyes/vine) for all varieties (table 1).

Growth vigor of the vine was assessed by the amount of wood removed from the cut. This amount of wood is made of wood and multi-year.

Data from the three years of experimentation (2011-2013) highlight the major differences between varieties, the number of strings left to cut.

Table 1. Pruning weight (g/block vine), depending on bud load, mean 2011-2013

Variety	Variant	The amount of wood removed (g / vine)		
		Total wood	Annual wood	Multianual wood
'Argessis'	V ₁	1325	1150	275
	V ₂	1375	1075	300
	V ₃	1430	1050	380
	Average	1410	1092	318
'Golden Ștefănești'	V ₁	1380	1200	180
	V ₂	1250	1000	250
	V ₃	1170	850	320
	Average	1266	1016	250
'Muscat Adda 22 Șt.'	V ₁	1560	1210	350
	V ₂	1550	1170	380
	V ₃	1550	1150	400
	Average	1552	1176	376
'Augusta'	V ₁	1120	820	300
	V ₂	1150	800	350
	V ₃	1150	760	390
	Average	1139	793	346

CONCLUSIONS

With vineyard wine Ștefănești-Argeș, table grape varieties grown obtained can compete in

terms of quality with many other varieties produced worldwide ('Muscat d'Adda', 'Perlette').

'Golden Ștefănești' variety is appreciated as a very early variety for vineyard Ștefănești and successfully completes many varieties area (ripening in the first period).

By promoting the production of table varieties of high biological resistance to attack by pests and diseases will protect the environment in terms of the viticultural area.

Producing more grapes will reduce our country's imports of these products, which are sometimes straight from indigenous varieties grown in other European countries (e.g. 'Victoria').

'Argessis' and 'Golden Ștefănești' varieties successfully complete many varieties area as table varieties.

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