AGROBIOLOGICAL PARTICULARITIES AND TEHNOLOGICAL ELEMENTS OF CULTIVATION OF GUZUN TABLE GRAPE VARIETY

PARTICULARITĂȚILE AGROBIOLOGICE ŞI ELEMENTELE TEHNOLOGICE LA CULTIVAREA SOIULUI DE MASĂ GUZUN

CUCU Valentina[1]
e-mail: valea_lu@yahoo.co

Abstract*. Taking into account the actual preoccupation in the world regarding the extension of table grape varieties cultivation using new valuable and highly appreciated by consumer varieties, the present paper have the objectives: - selection of new varieties for completion of actual assortment and ensuring more superior production quantity and especially quality with the purpose of its promotion in production; - efficient application of inflorescences rate setting in combination with the number of buds after cutting.*
Key words*:* table grapevine varieties, agrobiology, length of pruning, green operations

Rezumat. *Având în vedere preocupările existente pe plan mondial privind extinderea culturii soiurilor de struguri pentru masă, prin folosirea creațiilor noi, valoroase, cu însuşiri apreciate de consumator, prin această lucrare s-a urmărit: alegerea soiurilor noi care să completeze actualul sortiment şi să asigure obținerea unor producții superioare din punct de vedere cantitativ şi mai ales, calitativ, cu scopul promovării lor în cultură; aplicarea eficientă a normării numărului de inflorescențe în combinație cu încărcătura de ochi lăsată la tăiere.*
Cuvinte cheie: soiuri de masă, agrobiologie, lungimea de tăiere, operațiuni în verde

INTRODUCTION

Recently is attested an important growth of consumption of fresh grapes due to general tendency oriented to healthy alimentation, richer in vegetable resources. Development of culture of cultivation of table grapes varieties according the actual and future requirement must be based on knowledge of productive characteristics of these varieties and of reaction of to various climatic factors and agro technical operations. Between principal uvological characteristics can be mentioned: commercial aspects, firm flesh, harmonious taste, thin and comestible skin, seedlessness, resistance to fungal diseases, suitable for

[1] Scientifico-Practical Institute of Horticulture and Food Technologies, Chişinău, Republic of Moldova

transportation and long term storage. Varieties with muscat flavor or expressed fruitiness, with notes of lemon, flowers, and caramel are demanded by consumers.

MATERIAL AND METHOD

As biological material for observations and measurements was selected table grape variety Guzun with medium-late time of full berry maturity. Planting distances are 2,8 x 1,5 m, training system is horizontal bilateral cordon vines form type Cazenave. Experimental plot have 1-5° slope with South-West orientation and 150 m altitude. The soil is medium eroded cambial chernozem. The experiment was organized in 5 variants in 3 repetitions by 10 plants each:

V1 – cutting length 2+2, bud load 24 buds/vine (cane + spur);
V2 – cutting length 2+3-4, bud load 34 buds/vine;
V3 – cutting length 2+5-6, bud load 44 buds/vine
V4 – one inflorescence at 2 shoots formed on the vine;
V5 - one inflorescence at 1,5 shoots formed on the vine.

Observations and measurements have been performed by comparison of variants and included: production of grapes per vine, average weight of a grape, sugar and acid total content of must, glucoacidimetric index. Experience was organized in Central zone of republic on experimental plots of STE Vierul in plantations established in 2005.

RESULTS AND DISCUSSIONS

Fig. 1 – Variety Guzun

Guzun (Muscat Derbenskii *x* Muscat de Saint Vallier) - variety created by the National Institute of Viticulture and Winemaking, homologated in 2004. Grapes are cylindrical-conical, with an average weight of 300-400 g. Berry is medium large, with green-yellow skin, slightly firm flesh and musket flavor. Vine vigor is medium. The variety has advanced resistance to winter conditions, mildew, bean, gray rot and mildew. Average crop production is 12-13 t/ha. Grape maturity is achieved in the third decade of September and accumulates about 180 g/L sugars and total acidity of 7.0-8.0 g/L H_2SO_4, tasting note is 9 points. Resistance to frosts and winter is very good (-23...-24°C). Grapes have good resistance to transport and can be stored in refrigerators until January-February. It is recommended to be used in vine-growing regions of Central and South of Moldova.

Cuttings are the most important vegetative surgical operations undergone by vine plants in the actual culture system, which smooth and improve crop quality (Jianu, 2000). Fertility characterized agro biological value and determines the production of grape varieties. Fertility expressed as the percentage of fertile shoots depends on the biological nature of the variety and vary depending on the load of fruit attributed by cutting (Perstniov, 2000). Variant with short and medium length cutting is observed an increasing percentage of growing shoots - 96-97%, and 76-78% of fertile shoots, compared with 67% on long cutting (tab. 1). The bud load is the main factor that determines the expression of the agro-productive characteristics of the vine varieties, as well as biological equilibrium between vegetative development - fruitiness and quantity – quality proportion. The three bud loads significantly influenced the grape harvest, which is obviously higher in the variant with 44 buds/vine. Cutting scheme 2+3-4 with bud load of 45 buds/vine, was revealed, to which the total production per hectare was 24.0 t/ha and 80% shareware. Short cutting also have good results, but there was a decrease in the percentage of fertile shoots, which allows concluding that bud load decreased the yield.

Table 1

Elements of fruit and productivity at variety Guzun when cutting with different bud load

Indices of production	Variant		
	V1	V2	V3
Percentage of shoots start in vegetation	96	97	89
Fertile shoots (%)	78	76	67
Number of inflorescences	22	30	34
Weight of the grapes (g)	320	400	300
Yield (kg/vine)	9,3	12,0	10,2
Yield (t/ha)	18,6	24,0	20,4
Sugar content, g/l	180	178	162
Acidity, g/l H2SO4	6,1	6,5	7,1
Glucose-acidimetry Index	39	27	23
Ware,%	77	80	70

Table vines can become profitable only when the grapes have both taste qualities, as well as commercial aspects. One of green operations, which will lead to improving the quality of grapes, is standardization of the number of inflorescences on the block (Condrea, 1972). Reducing the number of inflorescences on the block, has primarily the effect of increasing the weight of grapes (30-40%), normal development and growth of global production of grain by 10-15%. This ensures a high % ware (Ţârdea, 1995).

The research has been taken to task hub version of 34 eyes (tab.2), on which the normalization of inflorescences. Inversion 15 inflorescence at harvest block was 15.4 t/ha with a production of 90% freight, here is an increase in weight of 520 g grapes reaching values, sugars - 188 g/L. The normalization with

20 inflorescences harvest was 19.2 t/ha and 85% commodity production. In version control, without standardization maximum yield was 24.0 t/ha and 80% commodity production.

The data tables 1 and 2 shows that the control (V2 in table 1), inflorescence number is 30-50% higher, while other elements (the weight of grape, sugars) are comparatively low. In the climate conditions of Moldova overloading vine varieties semi tardive, as Guzun variety, not all owing uniform ripening grapes and wood chords. Therefore normalization of 15-20 inflorescences in influencing the number - (developing of grain, the increasing mass of grapes, sugar accumulation).

Table 2

Quality yield after thinning inflorescences at variety of Guzun

Indices of production	Variant	
	V4	V5
Number of shoots after weeding	30	30
Inflorescence after thinning	15	20
Weight of the grapes (g)	520	480
Yield (kg/vine)	7,7	9,6
Yield (t/ha)	15,4	19,2
Sugar content, g/l	188	180
Acidity, g/l H2SO4	6,0	6,1
Glucose-acidimetry Index	31	29
Ware,%	90	85

CONCLUSIONS

1. New table grape variety of Guzun is characterized by high production quality and taste, it can be cultivated with unprotected system in the southern and central parts of the Republic of Moldova.

2. This variety responds to short cutting and moderate load average vine inflorescences while standardization. A negative one is overloading, leading to decreasing of production of goods and reduce shoot growth. In favorable years the best cutting length is 2+3-4 with moderate load, average load figure 2+5-6 apply after cold winters when a large number of eye loss.

3. Application thinning inflorescences constitutes an important technological link as superior quality is obtained only in case of non-application. Grape production is obtained although quantitatively less compensated by the percentage of ware.

REFERENCES

1. Condrea C., 1972 - *Operaţiile în verde la viţa de vie.* Ed. Cartea Moldovenească, Chişinău.

2. Jianu O. A., 2000 - *Cercetări privind influenţa tipurilor de tăiere ale viţei de vie, asupra producţiei şi calităţii unor soiuri de struguri pentru vinuri roşii cultivate în centrul viticol Recaş, în condiţii agrotehnice diferite,* Teză de doctorat, USAMV Timişoara.

3. Perstniov N., Surugiu V., Moroşan E., 2000 - *Viticultura.* Ed.Tipografia Centrală, Chişinău

4. Ţârdea C., Dejeu L., 1995 - *Viticultura.* Ed. Didactică şi Pedagogică. Bucureşti.