

## BEHAVIOR ASSESSMENT OF NEWLY GERMOPLASM SOURCES OF CULTURE GROWING IN VITICULTURAL CENTER BANU MARACINE

Vintilescu Monica<sup>1</sup>, Cichi Daniela<sup>2</sup>, Giugea Nicolae<sup>3</sup>, Necula Cezarina<sup>4</sup>, Popa Camelia<sup>5</sup>

<sup>1,2,3</sup> University of Craiova, st. A. I. Cuza nr.13, Craiova, Romania

<sup>4</sup>Valahia University of Târgoviște, Faculty of Environment Engineering and Biotechnology  
B-dul Unirii, nr. 18-24, Targoviste, Romania

<sup>5</sup> National Research and Development Institute for Biotechnology in Horticulture, Stefanesti Arges, Romania  
E-mail: [inanecula2004@yahoo.com](mailto:inanecula2004@yahoo.com)

### Abstract

*Extension grape-vine culture, namely the introduction of a certain area of new varieties requires environmental assessment of suitability of the space allocated for this purpose.*

*Such factors may reveal optimal and restrictive, you can print a specific direction for the center of wine production can be investigated or choose those varieties which are best adapted to existing environmental conditions.*

*Improving the national range of varieties of table grapes, varieties created by the introduction in recent decades has enabled the completion and diversification, for each area of favorability and even tolerated areas. Thus, the polygon Experimental Station vineyard in Teaching, University of Craiova, framed in terms of administrative center of the vineyard Banu Maracine was created an experimental device.*

*For this purpose the Banu Maracine EDS study was initiated and technological agrobiological two new varieties recently introduced collection ampelography: Argessis șiAuriu of Ștefănești. The study seeks to answer how the environmental adaptation of Argessis variety, variety created in the Arges Ștefănești for conditions in Oltenia ecoclimatic wine during 2007-2009, compared with the variety Victoria.*

Keywords: table grape varieties, environmental adaptation, bio-behavior, potentially agobiologic

### 1. INTRODUCTION

Table grape varieties are distinguished by a series of biological characteristics and environmental requirements, knowledge of which is very important to adopt the best solutions to their territorial distribution, and to establish the most convenient technological solutions in order to obtain production supported quantitatively and qualitatively, with maximum economic efficiency. [1]

In order to promote and extend the culture of their new creations under the verification report is necessary: adaptation in different ecological areas of culture, bio-behavior (potentially agobiologic) and quality (technological) by offering organic and agrophytotechnical potential.

In recent decades, meteorologists analytical observations revealed, for the Oltenia region, in which the Banu Maracine and wine center, amid a warming climate that occurs high climatic variability with abrupt transitions from one season to another extreme, with many climatic risk phenomena (heat, drought) that

causes serious environmental consequences in general and special agriculture.[1]

The study seeks to answer how the environmental adaptation of Argessis variety, variety created in the Arges Ștefănești for conditions in Oltenia ecoclimatic wine during 2007-2009, compared with the variety Victoria.

### 2. MATERIAL AND METHODS

During the period 2007-2009 were carried out research on some table grape varieties and varieties with traits valuable supplement agrobiological market demand.

For commercial aspect but also the qualitative enjoyed great variety apreciat Argessis was praised in 2002.

Bearing varieties are a lot Maracine Banu experimentally. It was grafted on the rootstock Kober 5 BB and planted at 2.5 m distance 1,2/2,2m and 0,9/2,5 m. The form of culture of the hub was stipped semitall Guyot .[3]

Pedo-climatic conditions are specific vineyard Banu Maracine Center. The experimental field was located on a brown clay soil - iluvial,

textured clay-loam to clay in the first 60-80 cm depth. The structure of the surface soil is acid reaction (5.6), humus is 1.82 and decreases depth. Soil is a main component, which through specific environmental factors (soil temperature, soil moisture) and pedological determinants (humus content, texture, porosity, soil reaction) exerts a stronger influence on growth and rodirii vine, true typicity reflected in the wine-making products obtained.[3]

Pedological Fund of experimental polygon is represented by the type of soil - slightly reddish brown protosol luvic. Predominantly medium texture soil of this type gives a high value for native vines.

Hydro indices have medium values, correlated well with the size composition of soil and organic matter content. [4]

Argessis variety of work resulting from controlled hybridization between varieties of Moldova x Augusta and materialized through its homologated in 2002.

*Morphological characters:* The Budless is purple rosette, fluffy back. Young is semi-offshoot, with anthocyanins distributed stripes. Insertion of the first flower is on nodes 4-5, 2-3 distributed on the vine.

Fuñional hermaphrodite flower is normal. Mature leaf is large, three lobate dark green ribs anthocyan weak intensity, long teeth with sharp edges. Peñiolar lyre shaped sinus and the upper lateral sinus peñiolar and sinuses are opened in a V-shaped. *Grapes* is high (370-458g), compact middle cilindro form tapered, uniaxial, bi, tri - wing, with a length of 20-25 cm. Berries are large (8g), uniform, ovoid, bluish skin color with black, thick, and the flesh is crisp, and taste

### 3. RESULTS AND DISCUSSIONS

Analyzing the thermal regime is noted that the center is leading wine Maracine Banu particularly rich thermal resources, and this is a prerequisite for its suitability to the production of wine and wine quality. Thus, annual average temperature (averaged over 35 years) is 10.7<sup>0</sup>C monthly average temperature ranging between

- 1.9 and 21.2<sup>0</sup> C for the same period considered.[3]

The average temperature of the warmest months (July or August) the annual average (35 years), Banu Maracine growing center is 22.1<sup>0</sup> C. Global heat balance shows yearly averages of 3470 <sup>0</sup>C, active thermal balance recorded values between 3370 and 3 509 <sup>0</sup>C.

Multi-normal (average 35 years) the amount of rainfall in the growing center Banu Măracine has a value of 523.0 mm per year, of which 320.3 mm during the growing season.

Observations and measurements were made on the resistance of varieties of winter frost, vine vigor, carrying the main phenophase, duration of vegetation period were calculated and relative percentages of fertility, indices of productivity, quality and quantity of grape production.



Fig.1. ARGESSIS grape

### EVALUATION OF AGROBIOLOGICAL CHARACTERISTICS

#### *Vegetative growth potential*

The level of vegetative growth is reflected both intrinsic potential of the variety, the rootstock used, as well as offer green and agrophytotechnical. [2]

Study on behavior of variety in terms of average increases of shoots per vine highlights the growing power of varieties than Victoria (121.7 cm average increase in length of shoots) and Argessis (108.6 cm). Also, the variety Argessis be noted that, despite having a large power increase and a greater force, he provides a good ripening of the wood (wood aged

82,75%) correlated with good winter hardiness and therefore a high percentage of viable buds. The ratio of number of shoots and total grape / vine - relative fertility rate (CFR) confirms fotoperiodicite characteristics of varieties drawn from the values of the percentage of fertile tillers, providing useful information on the influence of culture system and applied tehnology.

Relationship between number and number of shoots grape trees - absolutely fertility rate (CFA) analysis reinforces the conclusions of the CFR and indicate possibilities of fructification of the cultivated varieties, illustrated by the average number of grapes on the fertile shoots.

Fertility expressed by coefficient values (cf. and CFA) shows obvious differences between wine varieties and between years considered. Relative fertility coefficient values ranged from 0.84 (Victoria) and the variety Argessis 1.32, while the absolute fertility coefficient of 1.63 and 0.84 for the variety Argessis variety Victoria.[4]

To better express the productivity potential of varieties in relation to cultivation conditions, we calculated the relative and absolute indices of productivity (IPA; IPR). Relative productivity index, which shows how the shoot

has produced on average, in addition to the growing significance of value terms, to determine the function of bud load per unit area or hub to achieve planned production.[4]

By analyzing the data, note that the varieties analyzed lower fertility potential, productivity is high, this is largely offset by higher average weight of a cluster (Figure 4).

In conclusion, we appreciate that the conditions Banu Maracine wine center, based on existing environmental resources and supply agrophytotechnical, table grape varieties analyzed largely recovered their fertility and productivity potential.

Quantity of grape production is obtained in the presence of a complex of factors. Of these, variety, environmental and technical conditions have an important role. Under the same environmental conditions and technical level and quality variety act production of grapes.

Depending on climate offer feature wine years 2008 - 2009 and the specific varieties, full maturation was achieved in both varieties from August 20 (Victoria Argessis).

Installing early maturing varieties analyzed fully in all the extra resources due mainly heliothermic, due to poor water resources recorded in 2008-2009 compared with vineyard vineyard 2007-2008.

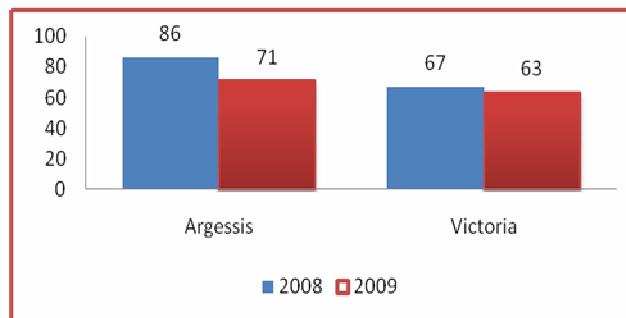


Fig. 2. Fertility shoots

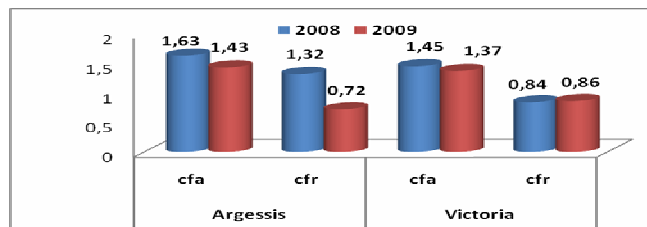


Fig. .3. Fertility coefficients

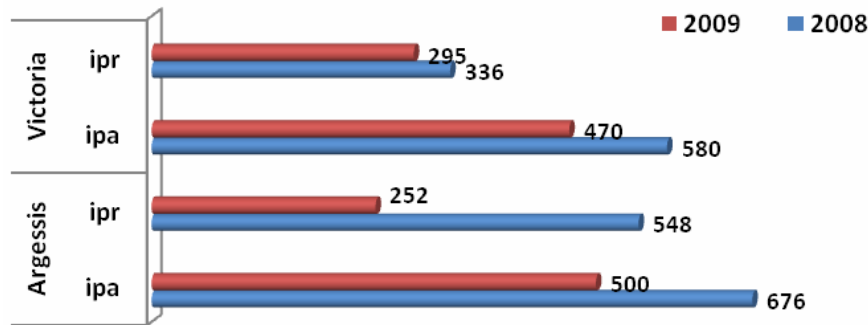


Fig. 4. Productivity indices (absolute and relative)

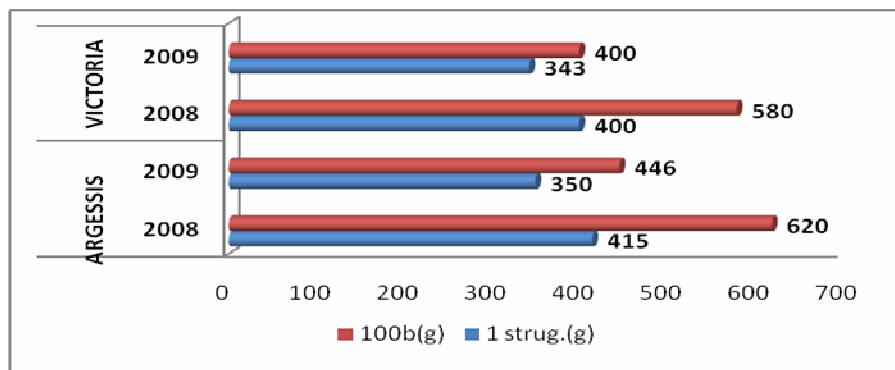


Fig. 5. Quality elements (a grape weight (g) and 100boabe weight (g) 2008-2009

The two varieties studied were noted in both these years the weight of the grape, but mainly by grain size and weight (620-400g). Fig. 5.

In terms of potential quality varieties analyzed, it was found that the greatest potential for accumulation of sugars was close in value (171-156g/ l) and acidity did not exceed the value of 3.6 g / l H<sub>2</sub> SO<sub>4</sub> at no variety.

#### 4. CONCLUSIONS

In conclusion, we appreciate that the conditions Banu Maracine wine center, based on existing environmental resources and supply agrophytotechnical, table grape varieties analyzed largely recovered their fertility and productivity potential, but there are certain constraints fluid.

Quantity of grape production is obtained in the presence of a complex of factors. Of these, variety, environmental and technical conditions have an important role. Under the same

environmental conditions and technical level and quality variety act production of grapes.

#### 5. REFERENCE

- [1] Daniela Doloris Cichi, 2006 – Modificările termice din ecosistemul viticol (cauze, efecte asupra viței de vie) - Editura Universitaria Craiova, 2006, 280 p, ISBN -973-742-507-3 / 978-973-742-507-2.
- [2] Olteanu I., Daniela Doloris Cichi, Costea D.C., Mărăcineanu L.C., Giugea N., 2004 -Providing and maintaining a durable viticulture during years with suboptimal helio-thermo-hydric regime in Oltenia region, Romania, Analele Universității din Craiova, vol. IX (XLV), Craiova , 17-26, 2004, ISSN 1435-1275
- [3] Camelia Popa, Cezarina Necula. A new vine variety for table grapes Agessis. Analele Universității din Craiova, vol. VIII(XLIV) 2003
- [4] Necula Cezarina, Cichi Daniela, Popa Camelia, Assessment of biological adaptation to climatic conditions of different viticultural centers of Victoria variety, Vol.10 Issue. Annals. Food Science and Technology 2009. ISSN 2065-2828