

## THE STUDY OF A PERSPECTIVE CLONE FOR OBTAINING WHITE WINES IN DRĂGĂȘANI VINEYARD

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### *Abstract*

*The study was carried out in the years 2010-2011 in private plantations from Drăgășani Vineyard on 'Carloganca' variety. From this study it was observed that some hubs of 'Carloganca' presents distinct characters distinct from other hubs in terms of fertility, productivity, quality and quantity yield, disease resistance, quality wine. This clone will be homologated, it is grafted and planted in the plot of verification to be introduced into culture.*

**Keywords:** clone, fertility, old varieties, vineyard, quality

### INTRODUCTION

Romania has one of the oldest European viticulture [1].

This study intended to restore the traditional assortment of Drăgășani Vineyard, one of the oldest and reputed vineyards of Romania. The old Drăgășani Vineyard assortment was consisted by 'Cârlogancă' ('Crâmpoșie'), 'Gordan', 'Braghină' and 'Tămâioasă Românească'. At Drăgășani, 'Cârlogancă' ('Crâmpoșie') is part of the basic varieties that had made the old assortment, producing with 'Braghină' and 'Gordan' the famous "Tulburel de Drăgășani". In this assortment 'Cârloganca' ('Crâmpoșie') holds the lead in terms of potential alcohol, and this fact made the old saying "Crâmpoșia gives strength, Gordan the foam and Braghina fills the barrel" [2].

In addition to restore the traditional assortment, is seeking valuables clones of these varieties.

Over time the Drăgășani Vineyard have obtained valuable vine varieties, namely 'Cârlogancă' ('Crâmpoșia'), at SCDVV Drăgășani by free fecundation was obtained Crâmpoșia selected [3], a good variety of COD (Controlled Origin Denomination) white wines.

From 'Crâmpoșie' were obtained and other important varieties in other research stations in

the country namely 'Timpuriu de Cluj' and 'Cetățuia' by sexual hybridization of 'Crâmpoșie' x 'Frumoasă de Ghioroc' varieties, table grape varieties obtained at SCP Cluj and 'Unirea' variety by hybridization between 'Crâmpoșie' x 'Muscat Ottonel', obtained at SCDVV Iași.[4].

### MATERIAL AND METHOD

The study was conducted in private plantations from Drăgășani Vineyard in 2010-2011. After identifying the variety 'Cârlogancă' which began to be endangered, in several locations of the vineyard, we studied a plantation with a population of 10 individuals located Gușoieni-Spârteni wine realm.

The plantation is very old, planting distance between rows of 1.8 m, and 1.4 m between the hubs.

Of the 10 studied hubs, were noted 2 identical hubs with different characters compared to the others. To these 2 identical elites discovered was give the 10-20-30 code and after the omologation will be called Cârlogancă cl. 10 CD.

We analyzed the fertility, productivity, quantity and quality of yield, disease resistance, quality of wine compared the witness [5].

On must, for sugar we used the Carl Zeiss hand refractrometer method and titration method ( $\text{H}_2\text{SO}_4$ ) for acidity [6].

## RESULTS AND DISCUSSIONS

Studying the phenology, there were recorded small differences between the elite and witness. The period of bud break is the same, 14 April, the blooming at 10-20-30 is between 27th of May-5th of June and at witness the 28th of May-6th of June. We find a difference of a day between the elite and the witness at the beginning of berry ripening, full maturity of the berry and beginning of wood maturity (Table 1).

The elements of fertility and productivity of the elite are, generally, superior to the witness (Table 2).

The number of shoots on a plant is 28 at the elite compared to 27 on witness and also the fertile shoots are superior to the elite (22) compared to the witness (20).

The number of the inflorescences is favorable to the elite, with 24 inflorescences/hubs, the witness having only 22 inflorescences/hubs.

The elites have a medium weight of the grape of 220 g compared to 218 g witness.

The coefficients of fertility and the indexes of productivity are greater at the elite compared to the witness, except for the absolute fertility coefficient which is superior at the witness, and the absolute productivity index is equal.

Coefficients fertility and productivity indices calculated are:

The coefficient of fertility is 78 % at the elite compared to 74 % at witness.

The relative fertility coefficient has a value of 0,85 % at the elite and 0.81 % at the witness.

The absolute fertility coefficient has a value of at the elite (1,09) compared to 1,1 at the witness.

The relative productivity index has a value of 187 at the elite and 176,58 at the witness. The relative productivity index is equal to both (239,8).

The grape medium productivity/hubs is superior at the elite (3,920 kg) compared to 3,750 kg at the witness.

The quality is better at the elite, 90 % being 'Standard' and 10 % first category. At the

witness we have 80 % 'Standard' and 20 % first category. (Table 3).

The physiological characteristics are, generally, better at the elite regarding the vigour and maturity shoot, the disease rezistence.

The behavior at frost, drought, small grapes and non maturity, the degeneration of the grapes because of negative atmospheric conditions are equal in both studied cases. (Table 4).

The technological characterization of both studied varieties shows us that the elite accumulates more sugar then the witness (200 g/l compared to 191 g/l). The acidity is also grater (5,1/4,5 g/l  $\text{H}_2\text{SO}_4$ ). (Table 5).

This 10-20-30 elite was grafted on 'Berlandieri x Riparia Kobber 5 BB Selecția Crăciunel 2' rootstock and planted in pots and in the verification plot of SCDP Vâlcea.

In the photos bellow we present images with 10-20-30 elite, the grape at full maturity, young shoot, the adulte leave and planted in pots.

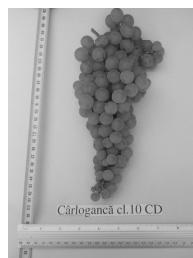


Photo 1



Photo 2

Photos 1,2. Elita 10-20-30 the grape at full maturity and young shoot (originally)

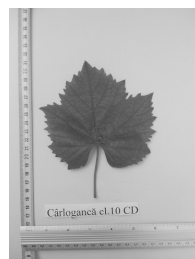


Photo 3



Photo 4

Photos 3,4. Elita 10-20-30 the adulte leave and planted in pots (originally).

Table 1. Phenological data

Code variety (hybrid)	Variety (hybrid)	Bud break	Blooming	Beginning of berry ripening	Full maturity of the berry	Beginning of wood maturity
10-20-30	'Cârlogancă cl. 10 CD'	14-04	27-05 – 05.06	07.08	19.09	09.08
witness	'Cârlogancă'	14-04	28-05 – 06.06	08.08	20.09	10.08

Table 2. Elements of fertility and productivity

Code variety (hybrid)	Variety (hybrid)	Shoots no.		Inflorescences no.	Medium weight of a grape (g)	Coefficients the ferilitate of shoots (%)	Fertility coefficients		Productivity indices	
		Total	Fertili				relative	absolute	relative	absolute
10-20-30	'Cârlogancă cl. 10 CD'	28	22	24	220	78,5 %	0,85%	1,09	187	239,8
witness	'Cârlogancă'	27	20	22	218	74 %	0,81%	1,1	176,58	239,8

Table 3. Production and quality data

Code variety (hybrid)	Variety (hybrid)	Number of hubs analyzed	Production kg/hub	Quality categories of total production %		
				'Standard'	I	II
10-20-30	'Cârlogancă cl. 10 CD'	2	7,84 kg	90 %	10 %	-
Mt.	'Cârlogancă'	8	30,0 kg	80 %	20 %	-

Table 4 Physiological characteristics

Code variety (hybrid)	Variety (hybrid)	Vigour	Maturity shoot	Behavior frost		Behavior drought	Floral accidents		Disease rezistence					
				Lost eyes	Shoot		Small grapes and non maturity %	Degeneration grapes%	Plasmopara		Oidium		Botrytis	
									F%	I%	F%	I%	F%	I%
10-20-30	Cârlogancă cl. 10 CD	32,5	24,1	4 %	Very good	Good	3	2	3,60	0,80	3,62	1,20	3,10	0,75
Mt.	Cârlogancă	27,2	18,4	4 %	Very good	Good	4	2	4,11	1,70	4,80	1,50	4,10	1,10

Table 5 The technological characterization

Code variety (hybrid)	Variety (hybrid)	Weight of 100 berries (g)	Sugar g/l	Acidity g/l H2SO4
10-20-30	'Cârlogancă cl. 10 CD'	270	200	5,1
Mt	'Cârlogancă'	250	191	4,5

## CONCLUSIONS

In Drăgașani Vineyard exists grape varieties genetical resources to save the germplasm which must be conserved *on farm, in situ* and *ex situ*, in ampelographic collections, to restore and enhance the traditional assortment of vineyard [7].

The 10-20-30 elite is very valuable presenting distinctive characters from the witness, it can be placed in the future in culture as 'Cârlogancă cl. 10 CD'.

From this study we see that this elite is very valuable, with good potential quantity and quality, very good resistance to disease.

It is very good for obtaining COD (Controlled Origin Denomination) wines.

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