

NOVAC AND NEGRU DE DRAGASANI VARIETIES FOR RED WINES WITH REMARKABLE TECHNOLOGICAL POTENTIAL

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Abstract

Novac and Negru de Dragasani varieties created at SCVV Dragasani, Valcea county are in measure to enter in competition with any another variety for red wines, concerning the composition parameters, but with productions that have superior levels regarding Cabernet Sauvignon, Pinot noir and even Merlot. Cultivated in the southern half of the Dragasani vineyard, in the area wandered by the stream Dalga, Mamu and Beica and of by the river Oltet, the Novac and Negru de Dragasani varieties show a productive and qualitative potential of high oenological level. This potential is expressed through productions, which can exceed constantly 10 t/ha, through relative contents in glucides, acidity, anthocyanans ant total polyphenols. These characteristics of grapes are reflected extremely positive in the characteristics of composition and the organoleptic properties of wines. The two varieties complete, happily, the indigene assortment for red wines, much more solicited on the meridians of the world. In the same time is successfully accomplished the condition enforced by UE concerning the wines promotion from national, indigene varieties.

Keywords: *variety, production, glucides, anthocyanans, composition.*

Introduction

The grape-vine culture and the preparing of the wines have a millenary tradition, in Dragasani area, from Valcea County.

The fame of which Dragasani wines always exulted and their constant quality in time, obtained from an assortment, settled fixedly along the time, determined the “Comisia” of Alexandru Ioan Cuza to prepare the participation of “Principatele Unite” to International

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Exposure from London, from the summer of the year 1862, to select them alongside of another Romanian creation (Chipurici, 1968).

In the last 5 – 6 decades, along with the white and flavors wines especially appreciated in our country and abroad, have been remarked the red ones, the varieties from which they are barred finding favorable natural conditions, similarly with the existing one in famous vineyards (Teodorescu, 1959-1960; Iliescu, 1965; Teodorescu, 1987).

In the assortment of varieties for red wines quality an important place is occupied in present, by the Novac and Negru de Dragasani varieties, created at the famous SCVV Dragasani. Some oenologic potential elements of the two varieties were mentioned in recently papers (Olteanu, 2002; Ionica, 2006). In the present paper will be presented results of a complex study concerning the technological value of the Novac and Negru de Dragasani varieties, cultivated in the south of the vineyard in which they have been created.

Experimental

The researches were made in the viticultural years 2003 – 2006, concerning the following components of oenological potential: the maturity process of grapes, in the sight of the defining them, on objective basis of their maturity: complete, phenolic and technological; the grapes productions; their relatively contents in glucides and acidity; the contents of anthocyanins and total polyphenols; the chromatic structure of anthocyanic complex from grapes; all to the technological maturity. In the wines obtained through a rigorous technology were settled: the contents in alcohol, total and volatile acidity, glycerol, unreduced extract, ash, glycerol · 100 / alcohol (g) and ash · 100 / unreduced extract reports; the contents in total anthocyanins, the chromatic features (Ic, Tc, dA%), the contents in total polyphenols and tannin, indexes of tannin (Ind. HCl, Ind. of gelatine, Ind. EtOH). For the study were used methods that are recomanded by OIV – Paris.

Results and Discussions

The data from the table 1 shows eloquently the physiological capacity of the two varieties for red wines, to accumulate in grapes important proportions of glucides, anthocyanins and total polyphenols in

the conditions of maintaining more good contents in acidity and productions that give complete satisfactions by the qualitative and economic point of view.

The contents: in glucides, are between 207 and 236 g/l (with an average of 218.8 g/l) at Novac and between 210 and 228 g/l (with an average of 216.3 g/l) at Negru de Drăgășani; in acidity, situate between 4.12 g/l and 4.41 g/l (with an average of 4.27 g/l) at Novac and between 4.20 g/l and 4.37 g/l (with an average of 4.29 g/l) at Negru de Drăgășani; in anthocyanins, situate between 1344 mg/kg beans and 1543 mg/kg beans (with an average of 1451 mg/kg beans) at Novac and between 1310 mg/kg beans and 1475 mg/kg beans (with an average of 1413 mg/kg beans) at Negru de Drăgășani; in total polyphenols are between 3.82 g/kg beans and 4.02 g/kg beans (with an average of 3.94 g/kg beans) at Novac and between 3.64 g/kg beans and 3.96 g/kg beans (with an average of 3.83 g/kg beans) at Negru de Drăgășani. The mention data, reported at productions are between 8895 kg/ha and 10011 kg/ha at Novac and between 8950 kg/ha and 9231 kg/ha at Negru de Drăgășani expresses a technological potential of two varieties.

Table 1. The main quality and productivity characteristics of Novac and Negru de Dragasani varieties

| Varieties | Year | Glucides g/l | Acidity g/l H ₂ SO ₄ | Anthocyanins mg/kg beans | Total polyphenols g/kg beans | The grapes productions kg/ha |
|--------------------|----------------|--------------|--|--------------------------|------------------------------|------------------------------|
| Novac | 2003 | 236 | 4.22 | 1543 | 3.95 | 9606 |
| | 2004 | 207 | 4.12 | 1344 | 3.82 | 8895 |
| | 2005 | 217 | 4.33 | 1442 | 4.02 | 10011 |
| | 2006 | 221 | 4.41 | 1475 | 3.97 | 9366 |
| | Average | 218.8 | 4.27 | 1451 | 3.94 | 9470 |
| Negru de Drăgășani | 2003 | 228 | 4.31 | 1475 | 3.90 | 8952 |
| | 2004 | 210 | 4.20 | 1310 | 3.64 | 9007 |
| | 2005 | 215 | 4.26 | 1406 | 3.96 | 9231 |
| | 2006 | 212 | 4.37 | 1462 | 3.81 | 9060 |
| | Average | 216.3 | 4.29 | 1413 | 3.83 | 9063 |

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The data from table 2 can amplify the sizes of technological value of the two varieties grapes, of at the wine-making moment. The percentage participation a different categories of pigments to the edification anthocyanic complex and the chromatic structures represented through the colouring intensity (*Ic*), the color tonality (*Tc*) and the cations flaviliu (*dA%*), signifies the procurement in wines of such colour in total agreement with most exacting claims on the world wine market.

Table 2. The characteristics of the anthocyanic complex from Novac and Negru de Dragasani grapes

| Varieties | The year | The participation of pigments, % | | | Ic | Tc | dA% |
|--------------------|----------------|----------------------------------|--------------|--------------|-------------|--------------|--------------|
| | | Yellow | Red | Blue | | | |
| Novac | 2003 | 29.4 | 60.5 | 10.1 | 3.06 | 0.486 | 67.26 |
| | 2004 | 28.8 | 61.5 | 9.7 | 2.93 | 0.468 | 68.71 |
| | 2005 | 29.2 | 59.6 | 11.2 | 2.87 | 0.490 | 66.05 |
| | 2006 | 28.1 | 62.0 | 9.9 | 2.90 | 0.453 | 69.33 |
| | Average | 28.87 | 60.90 | 10.23 | 2.94 | 0.474 | 67.84 |
| Negru de Drăgășani | 2003 | 29.8 | 60.6 | 9.6 | 2.88 | 0.492 | 67.50 |
| | 2004 | 30.1 | 59.3 | 10.6 | 2.94 | 0.508 | 65.67 |
| | 2005 | 28.9 | 60.9 | 10.2 | 2.77 | 0.475 | 67.90 |
| | 2006 | 29.6 | 60.5 | 9.9 | 2.82 | 0.489 | 67.33 |
| | Average | 29.60 | 60.33 | 10.07 | 2.85 | 0.491 | 67.10 |

Totally the two varieties and the four viticultural years, the proportions of yellow pigments with little under 30%, of red pigments of 60% and blue pigments of 10%, are finding themselves in the values of flaviliu cations, situated between 66.05% and 69.33% at Novac and between 65.67% and 67.90% at Negru de Drăgășani.

The basic characteristics of grapes in direct relation with primary wine-making biotechnology are convincingly shown in the physico-chemical and phenolic parameters of Novac and Negru de Dragasani wines. (tables 3 and 4).

The contents in alcohol aren't below 12.0 %vol., otherwise it exceeds 13.0 %vol., at Novac, in 2003, extremely good year for the

viticulture of the Dragasani vineyard. Regarding the total acidity in same year (2003), the wine shown a content under 4.0 g/l (actually 3.85 g/l), else this oenological size has placed between 4.02 g/l (Negru de Drăgășani – 2004) and 4.36 g/l (Novac – 2006). Is been observed that, in rapport with alcohol proportions, pretty higher, the acidity presents exception levels.

The compositional equilibrium of Novac and Negru de Dragasani wines is obvious outlined by: contents in glycerol, between 9.32 g/l (Negru de Drăgășani – 2004) and 11.0 g/l (Novac – 2003); the contents in unreduced extract, between 26.22 g/l and 27.60 g/l, with more over the minimum stipulation from LVV, established for red wines of DOC type (23.0 g/l); the contents in ash with values situated between 2.48 g/l (Negru de Drăgășani – 2005) and 2.71 g/l (Novac – 2003).

The high level of naturalness of wines emerges from the values of glicerol · 100 / alcohol and ash · 100 / unreduced extract reports, significantly approached from level considered ideally (that is 10 %).

The wines are rich in anthocyanins (805 mg/l – 842.0 mg/l at Novac and 765 mg/l – 811 mg/l at Negru de Drăgășani; the chromatic structure is represented by the color intensity, the color tonality and the proportions of flaviliu cations marking out an alive color, brightness, very slightly. The produces presents robustness, “*personality and expressiveness*”, quality conferred by the optimum contents in total polyphenols and tannin, and organoleptic properties are positive influenced by the tannin indexes (Ind. HCl, Ind. of gelatin, Ind EtOH), of which values are in agreement with the high exigency claims.

Conclusions

Novac and Negru de Drăgășani varieties, exceptional Romanian creations represents the certain solution to obtain red wines at high quality, in Dragasani vineyard, in measure to satisfy the most rigorous pretensions shown in present on world wines market. The oenologic potential of the two varieties is expressed through very good productions, high capacity of bio-synthesisation and accumulation in grapes of glucides and anthocyanins, of maintain proper total contents of acidity, even in advanced phases of super-maturity. The wines presents a very balanced composition, are rich colored, without annoying

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nuances, extractive and very agreeable to consumption, even when are very young.

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Table 3. The main phisico-chemical compositional parameters of Novac and Negru de Dragasani red wines

| Varieties | The year | Alcohol %vol. | Total acidity g/l H ₂ SO ₄ | Volatile acidity g/l H ₂ SO ₄ | Glycerol g/l | Unreduced extract g/l | Ash g/l | Glycerol 100 /alcohol | Ash 100 / unreduced extract |
|--------------------|----------------|---------------|--|---|--------------|-----------------------|-------------|-----------------------|-----------------------------|
| Novac | 2003 | 13.2 | 3.85 | 0.41 | 11.00 | 27.60 | 2.71 | 10.72 | 9.82 |
| | 2004 | 12.2 | 4.10 | 0.43 | 9.75 | 27.06 | 2.67 | 10.12 | 9.87 |
| | 2005 | 12.8 | 4.30 | 0.41 | 9.88 | 26.35 | 2.52 | 9.78 | 9.56 |
| | 2006 | 12.9 | 4.36 | 0.32 | 10.21 | 27.16 | 2.68 | 10.02 | 9.90 |
| | Average | 12.73 | 4.15 | 0.39 | 10.21 | 27.04 | 2.65 | 10.16 | 9.79 |
| Negru de Drăgășani | 2003 | 12.6 | 4.10 | 0.36 | 10.20 | 27.10 | 2.63 | 10.26 | 9.70 |
| | 2004 | 12.0 | 4.02 | 0.42 | 9.32 | 26.45 | 2.59 | 9.84 | 9.79 |
| | 2005 | 12.6 | 4.16 | 0.43 | 9.41 | 26.22 | 2.48 | 9.46 | 9.46 |
| | 2006 | 12.1 | 4.32 | 0.37 | 9.62 | 27.33 | 2.62 | 10.07 | 9.59 |
| | Average | 12.33 | 4.15 | 0.39 | 9.64 | 26.78 | 2.58 | 9.91 | 9.64 |

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Table 4. The basic phenolic composition of Novac and Negru de Dragasani red wines

| Varieties | The year | Anthocyanins mg/l | Ic | Tc | dA% | Total polyphenols g/l | Tannin g/l | The indexes of tannin | | |
|--------------------|----------------|-------------------|-------|-------|-------|-----------------------|------------|-----------------------|---------------|-------------|
| | | | | | | | | Ind. HCl % | Ind. Gelat. % | Ind. EtOH % |
| Novac | 2003 | 842 | 1.631 | 0.531 | 61.09 | 3.10 | 2.72 | 30.4 | 51.9 | 17.2 |
| | 2004 | 805 | 1.505 | 0.534 | 62.39 | 3.35 | 2.81 | 28.6 | 47.7 | 16.7 |
| | 2005 | 814 | 1.526 | 0.585 | 58.58 | 3.41 | 2.98 | 27.7 | 48.1 | 17.1 |
| | 2006 | 832 | 1.533 | 0.562 | 60.17 | 3.22 | 3.02 | 29.1 | 47.7 | 17.4 |
| | Average | 823.3 | 1.549 | 0.553 | 60.56 | 3.27 | 2.88 | 28.95 | 48.85 | 17.1 |
| Negru de Drăgășani | 2003 | 811 | 1.543 | 0.524 | 62.22 | 3.05 | 2.69 | 29.9 | 53.4 | 16.8 |
| | 2004 | 791 | 1.399 | 0.566 | 59.94 | 3.13 | 2.83 | 27.7 | 48.9 | 17.4 |
| | 2005 | 783 | 1.403 | 0.604 | 57.37 | 3.52 | 3.06 | 28.3 | 48.6 | 15.4 |
| | 2006 | 765 | 1.345 | 0.580 | 58.05 | 3.08 | 2.92 | 28.6 | 50.2 | 17.7 |
| | Average | 787.5 | 1.423 | 0.569 | 59.64 | 3.19 | 2.88 | 28.63 | 50.27 | 16.82 |