ASPECTS REGARDING THE TECHNOLOGY AND CHARACTERISTICS OF BLANC DE NOIR WINES OBTAINED FROM BĂBEASCĂ NEAGRĂ BLACK GRAPES VARIETY

ASPECTE PRIVIND TEHNOLOGIA ŞI CARACTERISTICILE VINURILOR BLANC DE NOIR OBŢINUTE DIN SOIUL BĂBEASCĂ NEAGRĂ

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Abstract. *White wines are generally obtained from white grapes variety. There are certain situations when white wines may be obtained from the uncolored must of black grapes, wines known under the French name of blanc de noir (white from black). Such wines are used first of all as raw materials for the production of sparkling wines but they may also be characterized as wines stricto sensu. In this study, we obtained wines of blanc de noir type from the black grapes of Băbească neagră variety, harvested from certain vineyards of Moldavia. We focused on the turning to good use of the oenological potential of this variety for the production of blanc de noir wines since in the conditions of year 2010 Băbească neagră had a relatively high content of sugars and an acidity proper for the obtaining of high quality white wines characterized by freshness and fragrance. The physical-chemical characteristics of the obtained wines highlight the adequacy of obtaining such wines from Băbească neagră variety.*

Key words: Băbească neagră, blanc de noir wines, oenological potential.

Rezumat. *Vinurile albe se obţin, în principiu, din soiuri cu struguri albi. Există şi unele situaţii când vinurile albe se pot obţine din mustul necolorat al strugurilor negri, vinuri cunoscute sub termenul francez blanc de noir (alb din negru). Asemenea vinuri sunt utilizate în primul rând ca materii prime pentru producerea vinurilor spumante, dar pot fi şi comercializate ca vinuri stricto sensu. În prezentul studiu s-au realizat vinuri de tip blanc de noir din strugurii negri ai soiului Băbească neagră, recoltaţi din unele podgorii ale Moldovei. Valorificarea potenţialului oenologic al soiului în direcţia elaborării vinurilor de tip blanc de noir s-a urmărit deoarece în condiţiile anului 2010 strugurii soiului Băbească neagră au avut un conţinut relativ mare în zaharuri şi o aciditate corespunzătoare obţinerii vinurilor albe de calitate înzestrate cu multă prospeţime şi fructuozitate. Caracteristicile fizico-chimice ale vinurilor obţinute reliefează pretabilitatea obţinerii acestor tipuri de vinuri din soiul Băbească neagră.*

Cuvinte cheie: Băbească neagră, vinuri blanc de noir, potenţial oenologic.

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INTRODUCTION

Băbească neagră variety, an old Romanian variety occupying the highest surface of all autochthonous black variety may contribute to the improvement of the wine assortment in a certain viticultural region through the multiple possibilities of turning grapes to good use (Cotea Victoria, Cotea V.V., 1996). For this purpose, depending on the harvest year and the production purposes, we may obtain a wide range of wines (white, rosé and red) from the grapes of this variety; moreover, due to the moderate content of alcohol and high acidity, grapes may represent an excellent raw material for sparkling wines (Cotea D.V. et al., 2000).

The processing of the black grapes of Băbească neagră variety to obtain wines of *blanc de noir* type represents a solution when grapes fail to accumulate certain years a sufficient quantity of colour substances in order to obtain high quality red wines, or the grapes were attacked in a high percentage by the grey mold or when we want to diversify the wine assortment through this production direction.

MATERIAL AND METHOD

In the elaboration of this study we used black grapes from the autochthonous Băbească neagră variety, the 2010 harvest, from the vineyards of Iaşi, Dealu-Bujorului, Nicoreşti, Odobeşti and Panciu. Harvesting was made manually and the grapes were put in wooden cases. The grapes were then transported and processed at the pilot Station for vinification of the Faculty of Horticulture, Iaşi. Table 1 presents the compositional characteristics of the grapes during harvest.

Table 1

Compositional characteristics of grapes at harvest

No.	Vineyard	Harvest date	Reductive sugars (g/L)L	Total acidity g/L $C_4H_6O_6$
1	Iaşi	23.09.2010	204,24	8,74
2	Dealu Bujorului	16.09.2010	198,35	9,15
3	Nicoreşti	16.09.2010	181,62	10,41
4	Odobeşti	16.09.2010	201,82	9,03
5	Panciu	17.09.2010	214,11	8,62

The experiment was carried out as follows: the whole grapes without being mashed or detached from bunches, were pressed by means of a hydraulic press, and the working pressure was limited to 2 atm. in order not improve the wine with phenolic compounds. We determined total acidity and reducing sugars for the freshly obtained must.

To avoid the improvement with tannins and polyphenoloxidases (Cotea D.V. et al., 2009), only the must obtained without pressing the grapes and the one from the first pressing was inseminated with selected yeasts *Saccharomyces cerevisiae*, in proportion of 20 g/100 kg (without administration of pectolitic enzymes) and then transferred into stainless steel containers where it finished its alcoholic fermentation (Pomohaci N. et al., 2000). We took measures during the

alcoholic fermentation so that temperature should not exceed 20°C. the process of malolactic fermentation did not take place since these types of wines must meet the sensorial characteristic of white wines (Cotea D.V., 1985). Wines were improved and subsequently bottled.

We determined the alcoholic concentration, the reducing sugars, the relative density, total acidity, volatile acidity, pH, non-reducing extract, total dry extract for the variants of wines obtained. We also calculated the values of the chromatic parameters, the content in phenolic compounds and the anthocian content.

The physical-chemical tests were run on the basis of the methods indicated by the international and state standards and the specialized literature as well.

RESULTS AND DISCUSSIONS

The main composition characteristics of the wines obtained from Băbească neagră variety are given in table 2. The alcoholic concentration of the analysed wines ranges between 10.54% vol. (Nicoreşti vineyard) and 12.41 (Panciu vineyard). As for wines' content in reducing sugars, we may notice that all analysed wines are dry (max. 4g/L).

The non-reducing extract expressed in g/L had the following values: the wine obtained from grapes harvested from Nicoreşti vineyard had the lowest value of 18.56 g/L, and the wine obtained from grapes harvested from Panciu vineyard had the highest value of 22.05 g/L. Total acidity of wines, expressed in g/L $C_4H_6O_6$, had different values depending on the maturation stage of grapes at the moment of harvesting; thus, *blanc de noir* wine harvested from Nicoreşti vineyard registered the highest value of 8.07 g/L, whereas the lowest value of 6.43 g/L was registered by the wine obtained from grapes harvested from Panciu vineyard.

As for the wines' pH, this varied between 3.11 for the wine obtained from grapes harvested from Nicoreşti vineyard and 3.49 for the wine obtained from grapes harvested from Panciu vineyard.

As for the wines' content in anthocians, we may notice that this ranged between 22.71 mg/L (Nicoreşti vineyard) and 29.38 mg/L (Iaşi vineyard) (tab. 3).

Table 3

Anthocyans content in blanc de noir wines

Nr. crt.	Vineyard	Anthocyans (mg/L)
1	Dealu Bujorului	28,71
2	Iaşi	29,38
3	Nicoreşti	22,71
4	Odobeşti	26,93
5	Panciu	28,48

Table 2

Compositional characteristics of blanc de noir wines obtained from the black grapes of Romanian variety Băbească neagră

No.	Vineyard	Alcohol conc. (% vol.)	Reductive sugars (g/L)	Relative density at 20ºC	Total dry extract (g/L)	Non reductive extract (g/L)	Total acidity g/L $C_4H_6O_6$	Volatile acidity g/L $C_2H_4O_2$	pH	SO_2 free mg/L	SO_2 total mg/L
1	Dealu-Bujorului	11,42	1,96	0,9930	21,1	19,14	7,51	0,35	3,32	20,61	62,21
2	Iaşi	12,15	1,15	0,9928	22,9	21,75	6,57	0,29	3,42	22,40	69,21
3	Nicoreşti	10,54	1,34	0,9936	20,1	18,76	8,07	0,20	3,11	20,15	62,37
4	Odobeşti	11,98	3,14	0,9929	22,70	19,56	7,51	0,26	3,38	24,69	72,59
5	Panciu	12,41	1,65	0,9929	23,7	22,05	6,43	0,36	3,49	19,22	57,71

Table 5

Values of the chromatic parameters of blanc de noir wines obtained from Băbească neagră

No.	Vineyard	Clarity L	Color coordinates		Saturation C	Tonality H	Luminosity	Hue
			a red(+) - green(-)	b yellow(+) - blue(-)				
1	Dealu Bujorului	96,58	-0,79	8,04	11,25	63,22	0,34	1,29
2	Iaşi	96,39	-0,82	4,42	2,55	71,86	0,33	1,32
3	Nicoreşti	98,04	-0,64	6,95	7,22	74,18	0,28	1,45
4	Odobeşti	96,88	-0,76	2,11	4,72	71,45	0,31	1,35
5	Panciu	95,78	-0,94	7,05	9,28	79,47	0,47	1,09

In terms of wines' content in phenolic compounds, we may see that the content in anthocians had the minimal value of 174.53 mg/L (Nicoreşti vineyard), and the maximal value of 228.62 mg/L (Iaşi vineyard) (tab. 4).

By comparing the vineyards, we may conclude, in general, that *blanc de noir* wines obtained from the black grapes of Băbească neagră variety harvested from Iaşi vineyard had the highest values in terms of the phenolic compounds. This aspect shows the influence of the stage of phenolic maturation (the grapes from Iasi vineyard were harvested one week later as compared to the other vineyards) when harvesting the grapes over the content of total phenolic compounds of the obtained wines.

Table 4

Phenolic compounds content in blanc de noir wines

Nr crt.	Vineyard	Total phenolic compounds (mg/L)	D_{280}	I_{FC}
1	Dealu Bujorului	55,39	5,12	3,68
2	Iaşi	61,62	4,89	3,76
3	Nicoreşti	49,84	4,91	3,51
4	Odobeşti	52,15	6,11	4,36
5	Panciu	58,73	6,25	4,87

In table 5 we present the values of the chromatic parameters for the wines obtained by *blanc de noir* technology.

Among the colour components measured through CIE Lab 76 method, L clarity and the values of modifications of *a* and *b* parameters were more important. L clarity characterizes the visual aspect more or less "bright" of wine colour and it may range between zero for a black-opaque sample and 100 for transparent colorless samples. More precisely, it varies between 95.78 (Panciu vineyard) and 98.04 (Nicoreşti vineyard).

"a" red-green colour component (Tab. 5) represents the coordinate of complementary red-green colours and, as it is natural, it has negative values for the white wines (the value is -0.64 for the wine harvested from Nicoreşti vineyard) where the green hues are preponderant as compared to the red ones.

"b" yellow-blue colour component represents the coordinate of complementary yellow-blue colours. In wines, the values of this parameter are usually positive since the yellow hues are preponderant as compared to the blue ones, the minimal value of 2.11 being registered by the wine obtained from grapes harvested from Odobeşti vineyard and the maximal value being of 8.04 being registered by the wine obtained from grapes harvested from Dealu-Bujorului vineyard.

CONCLUSIONS

1. *Blanc de noir* wines obtained from the harvest of 2010 might be classified into the category of DOC – CMD wines (wine having a controlled

origin denomination – grapes harvested at full maturity), except the ones obtained from the grapes harvested from Nicoreşti vineyard which may be classified into the category of wines with geographical indication (IG) – Dealurile Moldovei.

2. The most balanced wines were obtained from the grapes of Băbească neagră variety harvested from Iaşi vineyard.

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