

STUDIES ON SOME ALIGOTÉ WINES OBTAINED THROUGH DIFFERENT WINE-MAKING TECHNOLOGIES

STUDII ASUPRA UNOR VINURI DE ALIGOTÉ OBTINUT PRIN DIFERITE TEHNOLOGII DE VINIFICAȚIE

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Abstract. *The influence the fermentation volumes have on the sensory profile of the final product is very important. Aligoté grapes from Bucium viticultural center, Iasi vineyard were used. After crushing, destemming and pressing, the marc was divided into containers of various volumes, from 25 L demijohns to 1000 L tanks. Various selected yeasts was inoculated. For the organoleptic analysis of wines obtained by the fermenting Aligoté musts, a sensory analysis was organized for each wine assortment. The wines obtained in the industrial system show notes of fresh cut grass and hay and more pronounced notes of green fruits, with a stronger minerality. The texture and persistence of the wines obtained at small scale production are more obvious.*

Key words: Aligoté, wine fermentation; yeast, winemaking

Rezumat. *Gradul de influență al volumelor de fermentare asupra profilului senzorial al produsului final a fost studiat. Strugurii din soiul Aligoté au provenit din centrul viticol Bucium, podgoria Iași. După zdrobire, desciorchinare și presare, mustul a fost divizat în recipiente de diverse volume, de la damigene de 25 L la cisterne de 1000 L. S-a făcut incolul de diverse sușe de levuri selecționate. Pentru aprecierea organoleptică a vinurilor s-a organizat o analiză senzorială pentru fiecare sortiment de vinuri. Vinurile obținute în sistem industrial prezintă note de fân cosit și fructe verzi mai pronunțate, iar mineralitatea acestuia este mai pronunțată. Textura și persistența vinului obținut la capacități mici de producție sunt mai evidente.*

Cuvinte cheie: Aligoté, fermentarea vin, levuri, vinificație

INTRODUCTION

Aligoté grape variety originates from the wine region of France Auxere-Chablis-Bourgogne. The first written references on it appeared in 1780; in our country it was brought after 1900 and it adapted very well to the climatic conditions encountered in Moldova's vineyards. The oldest records refer to one of its synonyms, Plant de Trois. *Trois* is the French word for three, and refers to the

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three grapes we predominantly find on each shoot. Aligoté is said to have found its second homeland in Romania, more precisely in Iași, thus obtaining wines specific to the area.

MATERIAL AND METHOD

The Aligoté grapes were harvested in 2015, from Bucium vineyard (Vișani center), near Iași, the trials being done at S.C. "HOUSE OLTEANU" S.R.L., which produces wines known under the 'Gramma' brand. The grapes have the potential to obtain wines with a denomination of controlled origin (D.O.C.). The wine was obtained by preferential maceration for two hours, after which the must was collected in two separate vessels (free run must and press must), each of which was fermented separately. After these operations, the must was divided into containers of various volumes, ranging from 25 L demijohns to 1000 L tanks. Musts were fermented using both selected yeasts as well as native yeasts. During the alcoholic fermentation, the same nutrients and activators were administered in the same concentrations to all samples. Wine samples were subjected to physical-chemical analyzes (alcoholic strength, total and volatile acidity, pH, reductive sugars) and organoleptic assessment in the U.S.A.M.V. Oenology Laboratory Iasi, using specific methods (Cotea and Sauciuc, 1988; Țârdea, 2007). The tasting was attended by 11 specialists, each evaluating the samples with points from 1 to 9.

RESULTS AND DISCUSSIONS

The main compositional characteristics of the Aligoté wines are shown in table 1.

Table 1

Main compositional characteristics of the wine samples

No.	Sample	Alcoholic concentration (% vol.)	Reductive sugars (g/L)	Total acidity (g/L C ₄ H ₆ O ₆)	Volatile acidity (g/L)	pH
1	A-D-FN	10.60	12.00	6.8	0.29	2.99
2	A-D-LE	11.20	2.40	6.8	0.29	3.09
3	A-T-LE	11.50	3.50	6.7	0.04	3.02

The 2015 wines obtained had the following compositional characteristics: the alcoholic strength registered between 10.6 %vol. for Aligoté sample spontaneous fermentation in demijohn (AD-FN) (No.1) and 11.50 %vol. for Aligoté wine fermented with selected yeast *Levulia Esperide* in tank (AT-LE) (No. 3). In general, the variants obtained with selected yeast inoculum, both in tanks and in demijohns, are within the quality category of D.O.C. wines. The samples where the fermentation took place with the help of spontaneous yeasts obtained values under the minimum for D.O.C wines. The total acidity ranged from 6.8 g/L in Aligoté wines fermented with *Levulia Esperide* in demijohns (A-D-LE) (No 2) and A-D-FN, and 6.7 g/L for A-T -LE samples. The sugar content

had values between 3.5 g/L at A-T-LE and 12.0 at A-D-FN (selected yeast inoculant (*Levulia Esperide*)), allowed fermentation of sugars so the resulting wines fall into category of dry wines with a sugar content of 2.4 or 3.5 g/L sugars, the variant with spontaneous yeast having a content of 12 g/L of sugars. Volatile acidity ranged from 0.04 g/L for A-T-LE wine and 0.29 g/L for A-D-LE and A-D-FN wines.

The comparative sensory diagram of Aligoté fermented in demijohns, with spontaneous and selected yeasts and in bigger volumes with selected yeasts is presented in figure 1. The wine obtained in tanks shows more pronounced notes of hay and green fruits, due to the secondary fermentation flavor resulting from the used yeast. Minerality is more pronounced in the samples produced with selected yeast inoculum in tank, this characteristic specific to Aligoté. The hue of dried fruit and ripe fruit perceived in large-scale fermentation is diminished. The texture and persistence of wine obtained in small capacities in the case of fermented must without commercial yeast inoculum are more obvious, this could be attributed to different genus of yeasts participating throughout the alcoholic fermentation. Fermentation aroma of non-*Saccharomyces* yeasts is much studied nowadays, as it can bring new notes to the wines.

The hue of honey and blossom flowers was felt the most in the case of wine fermented with inoculum in small recipients.

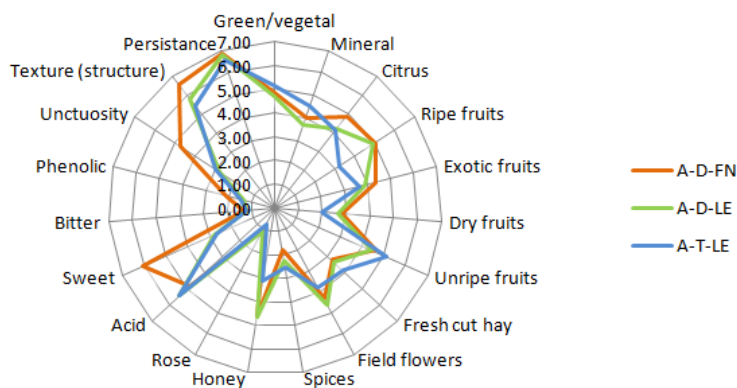


Fig. 1 Comparative Sensory Diagram for Aligoté wines fermented in demijohns and tanks, with selected and spontaneous yeasts

CONCLUSIONS

1. From the point of view of the alcoholic strength, the best ratio of sugar transformation is found in the variant where the inoculum was made with selected yeasts in the tank.

2. The spontaneous flora failed to fully ferment the sugars, the resulting wines being at the limit of the dry and semi-dry compared to the wines obtained with yeast inoculum.

3. As regards total acidity, all the wines obtained have similar values.

4. The type of used yeasts and the greater fermentation capacity allowed obtaining wines with lower volatile acidity values.

5. In the case of fermentating with the yeast brand Levulia Esperide in tanks, the wine has a more pronounced minerality.

6. The wine samples where spontaneous yeast were used, a better specificity of the variety and vineyard was observed.

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