STUDY OF THE BASIC INDEXES IN CLASSIC SPARKLING WINES PRODUCTION

STUDIUL INDICILOR DE BAZĂ LA PREPARAREA VINURILOR SPUMANTE CLASICE

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Abstract: *Basic indexes for qualitative appreciation of sparkling wines are froth making and playing properties, which depend on many factors: used sucheau of yeast, technological schemes of wine material processing etc.*

Rezumat. *Indici de bază pentru aprecierea calitativă a vinurilor spumante sunt proprietățile de spumare şi perlare, care se află în dependență de mai mulți factori: de suşele de levuri utilizate, de shemele tehnologce de tratare a vinurilor materie primă ş.a.*

Cuvinte cheie: vinuri spumante, suşe de levuri., vin materie primă, proprietăți de spumare şi perlare.

INTRODUCTION

Froth making and playing properties of finished product are specific criterion of sparkling wines quality appreciation.

Forming of classic sparkling wines typical properties depends on a number of factors: method of obtaining and technological processing of wine materials assambleaj and cupaj, their physico-chemical composition, used sucheau of yeast byocatalical properties, tecgnological regimes of secondary fermentation process etc. The goal of this work consists in carrying out study of improvement of technological regimes of processing of classic sparkling wines with advanced qualitative properties.

The main problems for achievement of the goal consist in the following:

1. Generalizing of previous studies on the influence of different technological schemes of processing of wine materials, which are destined for sparkling wines production for improvement of finished product quality.
2. Study of the influence of different compounds (proteins, amino acids, polysaccharides) upon froth making and playing properties of finished product.
3. Study of different sucheau of yeast for their utilization in sparkling wines production.

MATERIAL AND METHOD

Experimental and production assambleajes and cupajes for classic sparkling wines production;

- Auxiliary materials – bentonites, tannin, pectin, sihatannin, albutec etc.;
- Fermentation blend;
- Amino acids;
- Cuvee with different maturation term 1, 2, 3, 6, 9, 12, 18, 24 and 36 months;
- Selected sucheau of yeast from microorganisms collection of NIVW and of production;
- Finished products.

The methods recommended of OIVW, as well as the methods elaborated of NIVW were used in research carrying out. The reserch was carrying out with utilisation of assambleajes and cupajes of wine materials Aligote, Chardonnay and Pinot group.

RESULTS AND DISCUSSIONS

The carryed out researsh and obtained results in the reference to comparative characteristic od different schemes of processing of wine materials assambleajes and cupajes showed that obtaining these wines with high qualitative properties depends on a number of factors – wine materials physico-chemical composition in technological processing, pasting substances, used technological schemes of processing.

Results generalizing and comparative technological appreciation of researched technological shemes permit to offer utilisation of bentonites 1,5 g/dm^3 + fish glue 0,1 g/dm^3; albutec 0,5 g/dm^3; sihatanni 0,6 ml/dm^3 + bentonites 1,0 g/dm as optimal scheme for processing of assambleajes and cupajes of wine materials for sparkling wines production.

The previous carryed out study needs research carrying out by studying tensioactive substances alterations during secondary fermentation and cuvee maturation and their influence upon froth making and playing properties of sparkling wines.

Research was carryed out by physico-chemical analysis of production cupajes during cuvee maturation (term of maturation 9 months).

The results of carryed out studies of byochemical composition of initial cupajes (control) and cuvee showed that proteins mass concentration after secondary fermentation and maturation decreases insignificantly – in average 10-12 per cents. In the result of tensioactive substances coagulation and their sedimentation polisaccarides mass concentration decreases with 50-55 per cents of their content in initial cupajes. Polisaccarides considerable diminuation is on the basis of neutral polisaccarides, which do not take part in forming hydrogenic linkages with carbon dioxide. Phenolic substances mass concentration decreases insignificantly and correspond to these compounds content for white sparkling wines (200-230 mg/dm^3).

Carryed out analysis of amino acids composition indicated these compounds evident increasing from 45 to 85 per cents comparing with initial

data. It is explicated by utilisation of different sucheau of yeast, as well as by initial wine infusing on yeast sediment.

Carryed out research of cuvee physico-chemical composition showed that tensioactive substances are undergone to different alterations during cuvee maturation. These compounds were added in fermentation blend (metionin, triptofan – from 6 to 12 mg/dm^3, and pectin from 30 mg/dm^3) on the basis of obtained results and carrying out of research of the influence of free amino acids and polisaccarides, and pectin, forth making and playing properties of sparkling wines. The added compounds influence upon forth making and playing properties was appreciated by determination of these properties and carbon dioxide in link form in cuvee with term of maturation 9 months.

Mathematical processing of obtained results permited to establish the positive influence upon forth making and playing properties at pectin adding.

Obtained results analysis indicate that determinde amino acids content influences upon carbon dioxide content and playing properties, and forth making properties depend on pectin content.

For sparkling wines the factor characterizing finished products qualities is playing (min.), with optimal parameters pectin (X_1), triptofan (X_3) and metionin (X_2) regression ecuation is the following:

$$Y_1 = 259{,}125 - 2{,}02\ X_1 - 36{,}07\ X2 - 4{,}781\ X_3 + 0{,}08\ X_1X_2 - 0{,}01\ X_1X_2 +$$
$$+ 0{,}12\ X_2\ X^3 + 0{,}01\ X_{12} + 4{,}54\ X_{22} + 0{,}23\ X_{32} \quad [\ 1\ ]$$

Regression ecuation shows the influence of researched factors (pectin, metionin, triptofan) upon playing properties of sparkling wines.

Carryed out scientific research and mathematical processing of obtained results confirmed the considerable influence upon white sparkling wines forth making and playing properties, amino acids and pectin optimal contents.

Improvement of classic sparkling wines forth making and playing properties after adding in fermentation blend of metionin, triptofan (from 6 and 12 mg/dm^3), and pectine (30 mg/dm^3) was obtained on the basis of carryed out study. Sparkling wines quality depends on used sucheau of yeast, which in combination with byochemical processes is the base of technology of these wines production. Research was carryed out by using of sucheau of yeast from National Collection of Winemaking Microorganisms of national Institute for Viticulture and Winemaking (NCWM) of species Saccharomyces cerevisiae Rara-Neagra-2 (29), Rcatiteli-6 (30), Cahuri-2 (47), Cricova-1 (51), UCD-1 (64), LPS (81), SV-91 (89), as well as active dry yeast (ADY). After finishing of secondary fermentation process the complete analysis of physico-chemical indexes and fermentated cuvee organoleptic appreciation were carryed out. The fermented varieties of suchea of yeast nr.29 Rara-Neagra, nr. 30 Rcatiteli-6 şi nr.89 SV-91 were appreciated with good organoleptic mark. From ADY samples with utilisation BCS-103 and Fermactiv Champagne C of 20 g/hl were inregistrated with maximal organoleptic mark. The utilisation of sucheau of yeast from NCWM nr.29 Rara-Neagra, nr. 30

Rcatiteli-6 was recommended, generalizing carryed out research on the basis obtained results.

CONCLUSIONS

1. Realized experimental research conditioned elaboration technological regimes of processing of wine materials for sparkling wines, which provide production od stable wines with regulated content of tensioactive substances.

2. The improvement of classic sparkling wines forth makinf and playing properties were obtained by addind in fermentation blend of metionin, triptofan (6 and 12 mg/dm^3), and pectin (30 mg/dm^3).

3. The utilisation of selected sucheau of yeast Saccharomyces cerevisiae Rara-Neagr and Rcatiteli-6 were evidented, argumented and realized, including endurance of finished products forth making and playing properties.

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