

THE ANALYZE OF MINERAL COMPOSITION IN THE GRAPES AND WINES

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Summary: The investigations on the mineral composition of the complex-resistant varieties of grape varieties for example: White OF Suruceni, White of Onitskansky , Prime of Magaraci, Bianca and as a control Aligote, which is of great value for determining the place of origin of grapes and wine.

Key words: grapes, must, organic acid content.

Introduction

Beginning in 1995, a land development Dubasari (p. Doybany), where he opened a branch plant, built a modern winery in European type. Laid variety testing site and planted 80 varieties of grapes, which were brought from the Crimea, the Northern Caucasus, Armenia, Georgia, Moldova, Bulgaria, and Hungary.

Today the area of vineyards than 920 hectares, including 460 hectares of vineyards and 460 hectares of young plantations. Vineyards here-elite, seedlings purchased from the best kennels in Europe. Characteristics of soils were investigated for suitability for vineyards, the absence of contamination by pesticides and other toxic impurities and climatic conditions of the selected areas, and brandy production, and from 2005-2010 and batches of wine.

Projects at the option of land for the plant resource base, developed in conjunction with leading grapes, given trends in winemaking in recent years, aimed at preserving the biological value and safety of alcoholic beverages in the pollution of the environment, as well as the consistency of raw materials for production areas with controlled name of origin. Characteristics of soils were investigated for suitability for grapes [5.9].

Materials and Methods

We used the device «КАПЕЛЬ 103Р», produced in St. Petersburg Lumex firm. "Сертифицированный.Капиллярный" - electrophoresis method, a relatively new method of separation and analyze. The separation method implemented in the capillaries and is based on differences in the electrophoretic mobility of charged particles in water and in non-aqueous buffer electrolytes.

Results

Recommended table grape varieties and specifications for testing in Doybanskoy zone, Dubasari region. Along with the classic grape varieties were planted varieties of the new generation - selection of advanced scientific research organizations and grape plants of the CIS and the EU. These promising varieties for resistance to diseases, pests and frost. They combine the best features of the classic grape varieties and comprehensive resilience. The use of these types of treatments can reduce the number of vines, doses of drugs, which produces alcohol biologically cleaner and safer. [1, 2, 6, and 8]. From 1999 to 2010 the harvest of grapes from the technical test sites annually prepare wine materials, determine

their quality indicators and use in the intended direction of wine and distillates production, and from 2005 and 2010 years batches wine [3,4].

On the basis of research on Variety Trial were identified as promising and recommended for planting in industrial plantations of 20 varieties resistant to climatic Doybanskoy zone, Dubasari region giving stable quality harvests. Grapes: Aligotet, White of Suruceni, Bianca, White of Onițcani, Prime of Magaraci, Ryton, and others - for the production of brandy. Selected seedlings were planted on Doybanskih lands. [1,7-8]

Mineral content depends on the variety, soil - climatic conditions, degree of maturity, processing of grapes, and is thus one of the indicators that characterize the place of origin of grapes and wine.

Average data from 10 samples of the studied berry juice grapes harvest in 2002 and 2010 presented in table 1.

Table 1. The mineral composition of the studied must grapes.

Nr.	Ion concentration mg/dm ³	Grapes must				
		White of Suruceni	White of Onițcani	Prime of Magaraci	Bianca	Aligote
1	ammonium ions	49,0	60,0	65,0	72,0	93,8
2	potassium ions	843,0	615,0	630,0	1340	824
3	sodium ions	82,6	45,0	60,0	54,0	64,0
4	magnesium ions	84,0	56,0	80,0	121,6	58,0
5	calcium ions	110,0	100,0	200,0	208,0	190,0
6	chloride ions	20,0	25,0	43,4	27,5	27,6
7	sulphate ions	80,0	87,0	96,4	89,0	67,0
8	nitrate ions	0,5	0,6	0,8	-	3,4
9	fluoride ions	140,0	150,0	97,7	118,0	58,0
10	phosphate ions	5480,0	5002,0	4676,0	5392,0	4322,0

Table 2. The mineral composition of wine varieties under study

Indicators	Cognac wine materials from grapes:				
	White of Suruceni	White of Onițcani	Prime of Magaraci	Bianca	Aligote
Ion concentration ammonium ions, mg/dm ³	<0,5	<0,5	<0,5	<0,5	<0,5
Ion concentration potassium ions, mg/dm ³	481,0	443,0	334,0	430,0	300,0
Ion concentration sodium ions, mg/dm ³	145,0	156,6	200,0	186,0	150,0
Ion concentration magnesium ions, mg/dm ³	83,0	67,5	88,0	82,0	83,0
calcium ions, mg/dm ³	12,0	10,4	18,0	25,0	20,0
Ion concentration chloride ions, mg/dm ³	58,5	88,5	79	94,0	60,0
sulphate ions, mg/dm ³	129	147,5	187	99,5	135,0
Ion concentration nitrate ions, mg/dm ³	<0,01	<0,01	<0,01	<0,01	<0,01
Ion concentration fluoride ions, mg/dm ³	<0,01	<0,01	<0,01	<0,01	<0,01
Ion concentration phosphate ions, mg/dm ³	638,5	1210,0	2150,0	2834,0	1120,0

Conclusions

If we compare the mineral content of grape juice and wine, we can estimate the following rule on the content of ions in the grape juice compared to ion content in wine materials: ammonium ions - is reduced to trace amounts, potassium ions - is reduced by 1.5-2 times, the sodium ions - increased by 1.5-3.0 times, magnesium ions - at about the same level of calcium ions - is reduced to 9.5 10 times, the chloride ions - increased in 2.0-3.0 times, sulfate ions - increased by 1.5-2 times, nitrate ions - is reduced to trace amounts, the fluoride ions - is reduced to trace amounts, phosphate - ions - is reduced by 5-7 times. Decrease of content of most of the components in the mineral composition of wine materials caused by precipitation of the elements in the form of salts of K, Ca, Mg and other metals part minerals used yeast. This process depends on the used race yeast fermentation conditions. The work on the ionic composition of the complex-resistant varieties of grapes in the future will continue.

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