TECHNOLOGICAL APPRECIACION OF YEAST STRAINS FROM THE WINE CENTER "CRICOVA"

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Abstract: Pentru producerea vinurilor albe seci este necesară selecţia de suşe de levuri capabile să fermenteze în condiţii specifice: la temperaturi joase; în timp scurt; cu capacitatea de a flocula precipitatul, ceea ce nu necesită tehnologii suplimentare de limpezire sau filtrarea vinului; cu capacitatea de a forma spumă maximală sau mijlocie ca un indicator de prezenţă a substanţelor superficial active şi a puterii fermentative. În lucrarea dată a fost efectuată aprecierea tehnologică a suşelor de levuri locale, evidenţiate din centrul vitivinicol „Cricova", destinate producerii vinurilor albe seci.
Keywords: local yeast, dry white wine, technological evaluation

Introduction

Yeasts responsible for alcoholic fermentation in wine, usually penetrate the surface of must grapes, used equipment or direct administration of specific yeasts .

The fermentation process can be conducted both natural - without inoculation of selected yeasts, and the administration in must the yeast form or active dry yeast. Currently active dry yeasts are widespread in many countries, and using their excellent results are obtained, but, ultimately, higher quality wine is achieved when it is done with the use of indigenous yeasts .

In recent years, increased interest in using local yeast strains identified in fermented must, which have some specific metabolic characteristics and can positively influence the quality of the product .

Although commercial yeasts are widely used for must fermenting, is considered using local yeasts can be more effective, so it is assumed that they will be more competitive. This proves that they have a dominant potential in the wine fermentation process. In addition, using local yeasts needs to ensure typical sensory properties for wines produced in some centers.

Diversity of yeasts present in wine is a useful tool for selecting new strains dominate during the fermentation process and to increase expression in wine organoleptic characteristics. Purpose of research is assessing technological local yeast strains, shown in the center of wine "Cricova" for dry white wines.

Materials and methods

Strains of yeast.

In the present paper were studied local yeast strains (Cricova Ch (2), Cricova Ch (3), Cricova Ch (4), 1S, 1VT, 3VT), shown in the center of wine "Cricova". Studies on its morphological, cultural and physiological-biochemical allowed, using the identifier after Kudreavţeva, to establish that yeast strains identified belong to the species Saccharomyces vini.

Ability of flocculent precipitate.

Ability of flocculent precipitate was determined visually in YPG liquid medium, used as control flocculant and non-flocculant yeasts.

Killer factor.

To determine the phenotype was used method (Sangorrin, 2001).

Foaming.

Foam height was measured daily during alcoholic fermentation. According to Martínez-Rodriguez yeast strains were classified into three categories, depending on the height of foam: low = 2 mm foam, foam middle between 2 and 4 mm and abundant foam, more 4mm.

Resistance to SO_2 was determined on solid agar medium on must with different doses of SO_2 (100-150 mg / L), distributed in Petri dishes, incubating yeast with constant temperature of 27°C. Sowing biological material fermented mash (2 days) depletion loop method revealed that the cultures have grown faster.

Criotolerance.

To determine the physiological properties by studying resistance in cold fermenting yeast strains was analyzed dynamic fermentation must at a temperature 10°C.

Determination of sugars in musts was made with the densimeter, according to GOST 13192-73;

Determination of sugars in wine was performed by indirect titration method according to GOST 13192-73;

Results and discussions

It was found that the behavior of yeast strains to low temperature and SO_2 varies with the strain of yeast. It was also established that the ability to form foam and the capacity to flocculent precipitate, different, depending on the strain of yeast used. Results of these investigations are presented in Table 1.

In the results, the yeast strains studied can be divided into several groups.

Consistent resistance at low temperatures, in three groups:

• Resistance – low temperature (+ + +): Cricova Chardonnay (2), 1VT.

• Relatively strong (+ +): Cricova Chardonnay (3),
Cricova Chardonnay (4), 3VT.

• Less resistant (+): 1S

Consistent resistance to SO_2 into two groups:

• Resistant (+ + +): Cricova Chardonnay (2), 1VT, 3VT.

• Relatively strong (+ +): Cricova Chardonnay (3),
Cricova Chardonnay (4), 1S.

After foaming, the three groups:

• The maximum formation of foam: 3VT

• The middle foam formation: 1VT, Cricova Chardonnay (2)

• The minimum formation of foam: Cricova Chardonnay (3), Cricova
Chardonnay (4), 1S.

After the flocculant capacity, the two groups :

• flocculation: Cricova Chardonnay (2), 1S, 1VT, 3VT

• Non-flocculation: Cricova Chardonnay (3), Cricova Chardonnay (4)

Our study showed that all strains of yeasts are highlighted Neutral phenotype, not disappear in the presence of killer phenotype strains and strains not suppress the activity of sensitive phenotype.

Thus, for dry white wines need to select strains of yeast able to ferment in specific circumstances, for this purpose were selected these criteria following local yeast strains: Cricova Chardonnay (2) and 1VT.

Table 1. *Assessment of technological indices of local yeast strains.*

Denumirea suşei de levuri	**[(a)]Foaming, mm**	**[(b)] esistance at low temperatures**	**[(c)]flocculant capacity**	**[(d)] resistance to SO_2**	**phenotype**
Cricova Chardonnay (2)	++	+++	+	+++	Neutru
Cricova Chardonnay (3)	+	++	–	++	Neutru
Cricova Chardonnay (4)	+	++	–	++	Neutru
1S	+	+	+	++	Neutru
1VT	++	+++	+	+++	Neutru
3VT	+++	++	+	+++	Neutru

Legendă: (a) +++ maximum foaminess, ++ medium, +minimum
(b) +++resistant, ++ relatively resistant, + less resistant
(c) + flocculation, – Non-flocculation
(d) +++ resistant to SO_2, ++ relatively resistant

Conclusions

1. Technology assessment is the first step to select the most competitive local yeast strains for producing dry white wines.
2. Additional information is necessary to know about secondary compounds of alcoholic fermentation, which have a very important value informing the wine.
3. Experimental results have practical value, so that there is real opportunity to improve the quality of dry white wines.

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