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# Saccharomyces cerevisiae yeast strain for the production of dry white wines

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## INTRODUCTION

The invention pertains to oenology and biotechnology, specifically focusing on a native yeast strain, *Saccharomyces cerevisiae* CNMN-Y-35, isolated from Sauvignon grape must in the "Trifești" viticultural center. This strain is recommended for the production of dry white wines and exhibits advanced technological properties, especially the capability to ferment carbohydrates at low temperatures. The CNMN-Y-35 strain displays well-defined morphological, cultural, and physiological characteristics, including optimal growth in the temperature range of 18-28°C and colony formation within 48-72 hours, with an optimal pH range between 2.8-3.4. The strain does not produce H<sub>2</sub>S and possesses competitive potential in technology. This invention makes a significant contribution to the field of oenology and biotechnology by enabling the production of high-quality dry white wines through the utilization of a native strain with advanced technological characteristics.

## MATERIALS

- ❖ Yeast strain *Saccharomyces cerevisiae* CNMN-Y-35 for the production of dry white wines,
- ❖ White must, (Trifești viticultural center),
- ❖ white wines.

## METHODS

- The scientific and practical basis of the use of yeasts in oenology. Soldatenco Olga; Chișinău 2021, 184 p.



## RESULTS

The yeast strain can be used for the following examples:

### ❖ Example 1

Sauvignon grape must\* was sulfited up to 75 mg/dm<sup>3</sup> SO<sub>2</sub>, clarified cold (t=10°C) during 18 hours and after drawing from the formed sediment it was directed to alcoholic fermentation. As yeasts pure, selected local yeasts were used to carry out the technological process of fermentation *Saccharomyces cerevisiae* CNMN-Y-35 (hereinafter CNMN-Y-35). The volume of the yeast solution used at the alcoholic fermentation of the must constituted 1% of the initial volume of the must, and the fermentation process was carried out at a temperature of 14-16°C.

The alcoholic fermentation process of the must was characterized by a quiet fermentation, without intense formation of foam, which was completed within 18 days with complete fermentation of the sugars. The dry white wine obtained is characterized by a light straw color with greenish shades, clean aroma, with floral shades, clean, harmonious taste, well balanced, with floral nuances in the aftertaste. Organoleptic score □ 8.15. Thus, the use of the yeast strain CNMN-Y-35 allows the production of high quality dry white wine.

### Example 2

The Sauvignon grape must was sulfited up to 75 mg/dm<sup>3</sup> SO<sub>2</sub>, clarified at a cold temperature (t=10°C) over a period of 18 hours, and, after removing the sediment formed, directed for alcoholic fermentation. Selected pure yeast strains were used for the technological fermentation process, with the native yeast *Saccharomyces cerevisiae* CNMN-Y-35 (hereinafter CNMN-Y-35) being employed. The volume of yeast solution used for the alcoholic fermentation of the must constituted 2% of the initial must volume, and the fermentation process was carried out at a temperature of 14-16°C. The alcoholic fermentation process was characterized by a calm fermentation, without intense foam formation, which was completed within 16 days with complete sugar fermentation. The resulting dry white wine is characterized by a light straw color with greenish hues, a clean aroma with floral notes, a full, fresh, harmonious taste, well-balanced, and with floral nuances in the aftertaste.

The organoleptic score is 8.2. Thus, the use of the CNMN-Y-35 yeast strain allows for the production of high-quality dry white wine.

### ❖ Example 3

The Sauvignon grape must was sulfited up to 75 mg/dm<sup>3</sup> SO<sub>2</sub>, clarified at a cold temperature (t=10°C) over a period of 18 hours, and, after removing the sediment formed, directed for alcoholic fermentation. Selected pure yeast strains were used for the technological fermentation process, with the native yeast *Saccharomyces cerevisiae* CNMN-Y-35 (hereinafter CNMN-Y-35) being employed. The volume of yeast solution used for the alcoholic fermentation of the must constituted 3% of the initial must volume, and the fermentation process was carried out at a temperature of 14-16°C. The alcoholic fermentation process was characterized by a calm fermentation, without intense foam formation, which was completed within 14 days with complete sugar fermentation. The resulting dry white wine is characterized by a light straw color with greenish hues, a clean aroma with floral notes, a clean, fresh, well-balanced taste with floral nuances in the aftertaste. The organoleptic score is 8.05. Thus, the use of the CNMN-Y-35 yeast strain allows for the production of high-quality dry white wine.

## CONCLUSIONS

- ✓ The invention relates to oenology and biotechnology, in particular to a native yeast strain, isolated in the "Trifești" winemaking center and recommended for the production of dry white wines.
- ✓ The problem that the invention solves consists in obtaining a strain of autochthonous yeasts with advanced technological properties, especially with the ability to ferment carbohydrates at low temperatures, thus expanding their assortment.
- ✓ The yeast strain *Saccharomyces cerevisiae* is isolated in pure culture and deposited in the National Collection of Nonpathogenic Microorganisms of the Institute of Microbiology and Biotechnology with the number CNMN-Y-35.
- ✓ The result consists in the selection of a strain of yeasts for the production of dry white wines, which possess capacities of fermentation of carbohydrates at low temperatures, widening the assortment of native strains.

## ABSTRACT

The invention relates to oenology and biotechnology, in particular to a local yeast strain, isolated in the wine center "Trifești".

The *Saccharomyces cerevisiae* yeast strain is deposited in the National Collection of Nonpathogenic Microorganisms of the Institute of Microbiology and Biotechnology under the number CNMN-Y-34 and is recommended for the production of dry white wines.

## KEYWORDS

- Local yeasts,
- strain,
- white wines,
- winemaking center,
- physico-chemical parameters

**Patent application No.4728**

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**NOTE:** The research is conducted as part of the project titled "The industrial-scale utilization of the oenological potential of newly selected and native grape varieties and clones for the production of competitive wine products on international markets" under the State program "20.80009.5107.05."