

RESEARCH ARTICLE

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Isolation and characterization of oenological yeast.

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Abstract

Alcoholic fermentation is carried out by all microorganisms presented in must, which vary by technological characteristics of interest to oenology. So far, in Albania the fermentation is spontaneous and not directed, resulting in an absence of a standard product. The object of the present study is the isolation, identification and determination of yeasts, isolated in different phases of fermentation of musts from different varieties of grapes, with the purpose of selecting autochthonous yeasts for a directed fermentation. In the present study were isolated 14 strains, with P.D.A. and Y.M.A. mediums. After isolation, purity controls were made to the strains through cultivation and re-cultivation of them in Petri dish, and also, by running a stereomicroscopic and microscopic examination. Classification and identification of yeast strains in genus and species were based on macro-morphological characteristics of the colonies. Then, morphological characteristics of the cell were observed as an important taxonomic indicator. For the determination of the physiological and biochemical characteristics of yeasts, the assimilation of sugars and the fermenting ability of yeast were used. At the end were isolated and identified 9 strains of the genus *Saccharomyces*, 1 strain of the genus *Schizosaccharomyces*, 2 strains of the genus *Brettanomyces*, 2 strains of the genus *Kloeckera*. These will serve to further work towards their selection based on their fermenting technological characteristics.

Keywords: oenology, yeast, isolation, fermentation.

Introduction

Empowerment and modernization of agricultural, bio-industrial and nutritive production, welfare of a myriad of industry fermentative processes food and beverages, necessarily require a quality product and standard. In this context, winery and modern oenology requires, first choice variety of structures in conjunction with the factors underlying the ecosystem and secondly creating conditions more appropriate and specific fermentation which is realized through optimization fermentative process and use of selected yeasts, isolated from cultivars of the country and in various stages of fermentation[8]. Work for the detection and characterization of endemic strains, which can be used to produce products high quality and with special features, so take a importance of priority. Particular attention is drawn to the use of pure cultures of yeasts, which can be used in the processing industry for the production of grape wine, brandy, cognac, alcohol, vinegar, etc[5]. Efforts in this study focused on the isolation, selection and creation of a collection oenological strains with as high fermentative activity as possible[4].

Materials and methods:*The biological material.*

For the biological material is used Merlot variety from the area of Durres and Tirana and Cabernet sauvignon variety from the area of Durres during the fermentation process. Samples were taken at 3 (three) different phases of fermentation, stored in sterile bottles and kept at 4⁰C. Then these samples were submitted to isolation process of yeasts strains[6].

The mediums used.

The mediums used for cultivation of these strains have been PDA (Potato-dextrose-agar) (42 g/L) and YMA (Must-Agar) (47 g/L).

Isolation procedures.

Samples were serially diluted and then were plated in Petri dishes in 3 (three) repetitions for each sample. Then the samples were incubated at 25⁰C for 72 hours. After incubation, the plates were selected with 30–50 colonies. Control of purity was performed by streaking method cultivating and re-cultivating all isolated strains, accompanied with their stereo-and microscopic examinations[3].

