

THE STUDY OF THE SPECTROPHOTOMETRIC CHARACTERISTICS OF WINE MATERIALS IN STORAGE

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The possibility of coculture of *Saccharomyces cerevisiae* W 748 and *Lactobacillus plantarum* (strain A3 8P and 38) during the fermentation of grape juice for the production of red wine is studied at the Department of Biotechnology of National University of Pharmacy for prevention of the accumulation of malic acid, which gives a sharp taste wine. This one is characterized by so-called green acidity. With the transformation of malic acid into lactic, acidity and sharpness in taste of a young wine is reduced – it becomes softer and more harmonious. Previously, there were studies of changes in the number of microorganisms, total acidity and content of ethyl alcohol in the fermentation process.

Besides, one of the specific indicators characterizing the quality of red grape wine is the color of it. The color – is a comprehensive indicator of the chemical composition of wine (the amount of bound and free anthocyanins, which are natural antioxidants), which changes in the process of wine storage. One of the possible deterioration of color is oxidase browning, which affects low-acid young wine materials. In this case wine phenolics is oxidized, condensed and precipitated. The spectrophotometry is used in order to determine the intensity and color hue in wine-making.

At this stage the purpose of the research was to investigate the changes of spectrophotometric characteristics during the storage of wine which were obtained by using a pure culture of yeast and cocultivation *Saccharomyces cerevisiae* and *Lactobacillus plantarum*. The optical density and coefficient of light transmittance was defined at wavelengths of 420, 445, 495, 520, 550, 625 nm by means of spectrophotometer SF - 101. Then color hue and intensity was calculated.

Winematerials were kept during six months in the refrigerator at the temperature of 2-8°C, afterwards the above mentioned indicators were also identified.

The results of the research displayed an increase of optical density at 420 nm with a simultaneous decrease of this parameter at 520 nm, which is explained by transformation of coloring substances in the complex forms. The density at 520 nm is a characteristic indicator of absorption of individual anthocyanins and their changes are expressed in color intensity, in this case it is reduced.

The disappearance of individual forms of anthocyanins in testing wine materials is a result of their transformation into soluble and stable complex forms, thereby the wine retains an individual color.

Research results showed that regardless of the formation of complexes of anthocyanins in the wine materials, investigated objects retain intense ruby color after six months of storage, and color hue is much less than one, as in the case of co-culturing *Saccharomyces cerevisiae* and *Lactobacillus plantarum*, or using a pure culture of yeast. So, we can conclude that the combined use of lactic acid bacteria and yeast does not significantly affect the content of coloring substances in wine materials.