

THE STUDY OF THE ENZYMATIC PROPERTIES OF YEAST USED IN THE PRODUCTION OF ALCOHOL

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For today there is a fairly intense competition in the alcoholic beverage market in Ukraine. Therefore, obtaining a high yield of alcohol is one of the most important challenges facing the future engineers of biotechnology. It should also be borne in mind that the alcohol industry's manufacturing base has hundreds of plants with sufficient capacity to meet the needs of alcohol in food quality. Active equipment distilleries stable volume of alcohol production can be increased to 2,000 million liters or more per year without introducing any additional capacity. However, in recent years due to the increasing challenges of production of alcoholic beverages, low profitability significantly decreased the level of technical equipment of the enterprises. Wear of main equipment of most distilleries reaches 50%, the technology is somewhat outdated and meet modern requirements. In addition, the German race yeast offered for fermentation are expensive and do not address the needs of producers of alcohol production in volume. A primary industrial alcohol is ethanol, or ethyl alcohol. Alcoholic fermentation is one of the oldest, best known and most important of industrial fermentations. In this process, ethyl alcohol is produced from carbohydrate materials (such as sugars) by yeasts.

The aim of this work is research new sugar-containing raw materials that can be used as an additional component for the growth media to get more alcohol yeast.

According to the literature, as a component of the practical and scientific interest is the Jerusalem artichoke (*Helianthus tuberosus* L.), characterized by a high content of macro and micro nutrients, especially phosphorus, potassium, etc., water-soluble B vitamins, biotin, and endogenous enzyme activity, and most importantly, a valuable polysaccharide inulin (16-24% by weight of tubers). Moreover, the advantage of using different types of raw materials from Jerusalem artichoke (juice, pomace, homogenates, extracts) also lies in the fact that they are traditionally used in the different branches of economy. Consequently, the use of tubers in the production of alcohol yeast does not require health changes in the process of preparation. It would therefore be appropriate to look for new opportunities to increase the productivity of existing strains of *Saccharomyces cerevisiae*. For it is necessary to study their enzymatic properties when cultured in media containing various quantitative carbohydrate. In particular, further as an additional component for growth media will be selected the aqueous artichoke extract which will be obtained with boiling the chopped tubers in the ground water treated with acidified to pH 4 - 5. These data will be used for the development of new media for culturing yeast to produce alcohol at Department of Biotechnology of the National University of Pharmacy.