

THE INFLUENCE OF BIOCATALYSTS ON BIOMASS FERMENTATION PROCESSES

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In recent years, the quantity of agricultural waste has been rising rapidly all over the world. As a result, the environmental problems and negative impacts of agricultural waste are drawn more and more attention. Therefore, there is a need to adopt proper approaches to reduce and reuse agricultural waste.

Agricultural waste shows considerable applicability due to its high strength, environmentally benign nature, low cost, and ease of availability and reusability. All these characteristics have been researched upon in the past, in the sector of waste water management for the removal of heavy metals and dyes. So, a critical and up-to-date review has been conducted on the latest individual valorization technologies aimed at the generation of value-added by-products from food wastes in the form of bio-fuels, bio-materials, value added components and bio-based adsorbents.

Waste treatment in the wine and alcohol industry is the current problem in the Republic of Moldova. Currently, about 30 national alcohol distilleries produce alcoholic beverages and bioethanol operate at the territory of country. The annual volumes of the production and accumulation of liquid wastes are considerable. It is known that 10-13 liters of liquid wastes (distillery grains) are formed during the production of one liter of rectified spirit.

The aim of the scientific research is to examine the associated advantages and drawbacks of each technique separately along with the assessment of process parameters affecting the efficiency of the generation of the bio-based products. Research of the influence of biological active substances (aescinium, sclareol, menthol, botulin, tomatin, dihydroxyfumaric acid) on the process of alcoholic fermentation in the laboratory conditions. The biomass used is the waste from the ethyl alcohol production company "GARMA GRUP" SRL. The testing of a series of biologically active substances is performed in order to explore their possible activating or inhibiting effect on the alcoholic fermentation process. The increase in of biologically active substances concentration higher than 2 ml is no rational.

Key words: *bio-fuels and materials, food wastes, valorization, value added components*

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