LIGNOCELLULOSIC BIOMASS AFTER EXPLOSIVE AUTOHYDROLYSIS AS SUBSTRATE TO BUTANOL OBTAINING

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The aim of the work was investigation of the effect of the explosive autohydrolysis on lignocellulosic biomass (saving, switchgrass biomass) for consequent use as a substrate to produce biofuels such as butanol. Butanol-producing strains, switchgrass *Panicum virgatum* L. biomass and its components after autohydrolysis were used in study. The thermobaric pressure pretreatment of lignocellulosic biomass was carried out using specially designed equipment. The effect of explosive autohydrolysis on lignocellulosic biomass for further use in producing biofuels using microbial conversion was studied. Components of lignocellulosic biomass were fractionated after undergoing thermobaric treatment. The possibility of using different raw material components after using explosive autohydrolysis processing to produce biobutanol was found. Products of switchgrass biomass autohydrolysis were shown to need further purification before fermentation from furfural formed by thermobaric pretreatment and inhibiting the growth of microorganisms. The ability of strains of the genus *Clostridium* to use cellulose as a substrate for fermentation was proved. It was found that using explosive autohydrolysis pretreatment to savings allowed boosting the butanol accumulation by 2 times.

**Key words:** explosive autohydrolysis, butanol, lignocellulosic raw materials, bio fuel

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of moisture. 1.1.93. (In Russian).


