STRUCTURAL ANALYSIS OF HORIZONTAL CYLINDRICAL REACTOR FOR PRODUCTION OF BIOGAS

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Abstract. *The paper shows the relevance and importance of animal production waste alternative biofuels. Made patent search has allowed an analysis of existing designs of horizontal cylindrical reactors for processing of liquid and solid organic waste into biogas and biofertilizers. The research on the analysis of horizontal cylindrical reactor allowed identifying two types of fermenters, rotating reactors and reactors with a rotating agitator. Analysis of structural features horizontal reactors possible to determine the advantages and disadvantages of these fermenters and identify the main requirements for their structural parameters and modes, namely downloading biomass quality removal of biomass, maintaining the set temperature, the level of productivity and effective mixing, allowing depending on the specific volumes, conditions and objectives to choose the optimum type of reactor to produce biogas and biofertilizers. The main disadvantages of rotating reactor was charged for problems with removing biomass and low productivity, the benefits – maintaining preset temperature and mixing quality. The main disadvantages of reactors with a rotating agitator were attributed insufficient accuracy to maintain the set temperature, and the advantages – high quality and performance mixing process. Also, studies have allowed forming classification horizontal cylindrical reactors with their fundamental differences.*

Key words: ***reactor, biogas plant, biomass, biogas, biofertilizers***