EFFECT OF CLEANING BIOGAS OF ANAEROBIE BIOFERMENTATION OF ANIMAL WASTE TREATMENT PLANTS.

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Biogas purification, methane, carbon dioxide.

The purpose of the study. monitor the efficiency of absorption of CO2 from the biogas obtained at biofermentatsiyi animal waste alkali, and establish the basic parameters of the removal of impurities from the gas mixture.

Materials and methods. Biogas research received in the laboratory, due to anaerobic biofermentatsiyi animal waste, as well as CO2 sinks used regenerating spent alkaline solutions of OH ionitovyh filters water purification process CHP. For experiments using laboratory stand, consisting of absorbing devices (bottles) that contained in 4.0 liters of NaOH solution with a concentration of 10, 20, 30%. The resulting biogas is passed through a solution of alkali due to its water displacement, the cost of which controlled special device. Purified thus gas mixture collected in separate gas collector and used for research.

Three series of experiments. In the first series of studies for biogas purification using NaOH solution with a concentration of 10%, and in the second and third series 20 and 30% respectively. In the first series of experiments investigated the impact speed transmission biogas through regenerative solutions to the effectiveness of cleaning. Time passing biogas through regeneration solution in all experiments was 25 min, and the temperature - 20 0C.

Analysis of the chemical composition of the gas chromatograph was performed using LHN-72 with two columns length of 2 m and an internal diameter of 4 mm. One of the columns filled polisorb - 1, with a particle size of 0.25-0.5 mm, and the second - placed molecular sieve (5Å). Load de-Tector was katarometr - 160 mA. As the carrier gas helium was used. Gas mixture separated into its constituent components methane, carbon dioxide, oxygen and nitrogen in the first column. The second column separated gases that come out one peak. The resulting chromatograms were treated by internal-internal currency valuation area peaks.

Research results processed by variation statistics using software M. Excel....

The efficiency of the use of alkaline solutions, obtained from the OH-ionized water filters at power plants in the cleaning system of biogas formed in the reactions of anaerobic fermentation of animal waste at various flow rates of gas through an absorbing medium. It is shown that the most effective process of swallowing CO2 from biogas flowing at a final concentration of alkali in a solution of 10 – 20 % and a flow rate of 88 mm for minute.