**Abstract**

In recent years, the limitation of fossil resources, the non-renewable nature of these resources and the prediction of rising prices have led policy makers and planners of the energy sector to carry out structural studies, shifting energy carriers and greener to clean fuels at the top of their work programs, and one These options include the use of energy from biomass resources. An anaerobic digestion process is one of the accepted technologies, both in terms of industry and economics, for the production of energy from organic waste. Khuzestan province has a considerable potential for sugar cane production due to its high sugarcane fields. To investigate the process of producing biogas from the combination of sugarcane bagasse and cow's manure by anaerobic digestion, a factorial experiment was conducted in a completely randomized design with four levels of bagasse to cow manure and three replications ($T_1$=20:80), ($T_2$=30:70), ($T_3$=40:60), ($T_4$=0:100) at Ramin University of Khuzestan Animal Breeding Station. These compounds were evaluated based on the weight of dry matter evaporated at 10% at 37° C. At the end of the experiments, the highest amount of biogas produced in the 30:70 Combination was obtained at a rate of 0.310 cubic meters and the lowest amount of biogas produced in the 0:100 Combination, which was considered as control, was obtained at 0.233 cubic meters. There is a statistically significant difference between treatments promote research showed ($P<0.1$).