ULTRASOUND AS PRETREATMENT IN BIOGAS PRODUCTION FROM CRUDE GLYCEROL

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Abstract. *The global energy supply is based on petroleum derivate. Air pollution, acid precipitation, ozone depletion, deforestation and the gaseous emissions to the atmosphere are associated to the petroleum derivate use. Renewable energy sources are expected to replace them in order to solve these environmental concerns. Biofuels as biodiesel and biogas are renewable energy produced from natural matter. Studies made suggest that using the principal by-product of biodiesel's production process, crude glycerol, is possible to obtain biogas. Biogas can be produced from an anaerobic digestion process and enhanced by using pretreatment in substrate. This work tested ultrasound pretreatment on crude glycerol as a substrate in the biogas production. Different times of pretreatment (15 and 30 minutes) were examined, to determinate the best performance and compare it to the untreated substrate. The biogas production was daily measured directly from the reactors. The results showed that ultrasound pretreatment improved methane production. The best result was obtained by using 30 minutes of pretreatment on crude glycerol.*

Palavras-chave: *Ultrasound pretreatment, Anaerobic digestion, Crude glycerol.*