TITLE: THE EFFICIENCY OF SWINE LIQUID WASTE TREATMENT IN A WASTE STABILISATION POND SYSTEM

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ABSTRACT

Brazil holds the fourth position in the ranking of swine breeding and exportation and despite being concentrated in Southern Brazil, migrations to Middle-Western and Southeastern regions were accelerated, granting the state of Mato Grosso the fifth position of the most important swine breeding and exporters. Although pig-farming is economically effective, inadequate disposal of swine liquids can become a big environmental problem due to being composed by excrements, urine, animal feed and water originated from the facility washing. The aim of the present research is to analyze the efficiency of the disposal of swine liquids and also a possible source of contamination of artesian wells. The collecting was held on a farm based in the county of Jaciara-MT, in December 2018. Samples of the stabilization lagoon (entry and exit) and the artesian well were collected. The analyzed parameters were oxygen saturation, pH, temperature, color, turbidity, heterotrophic bacteria, total coliforms and *Escherichia coli*. The results revealed the following information: the concentration of heterotrophic bacteria was 6.843 log UFC/mL and 5.922 log UFC/mL, the total coliforms was 8.167 log NMP/100mL and 6.544 log NMP/100mL and Escherichia coli was 7.729 log NMP/100mL and 6.042 log NMP/10Ml in the raw and treated effluent, respectively. The results of the physical and chemical parameters of the treated effluent showed that the oxygen saturation was 0.19 mg/L, turbidity was 406 UNT, pH of 7.34, the true color was 2806.6 mg Pt/L and the temperature was 32ºC. It is notable that there was a slight reduction on the concentration of the microorganisms, which were analyzed, being this treatment unsuccessful in a way that this liquid cannot be disposed in the hydrous body according to the stablished law standards in the exercise. Furthermore, oxygen levels are under the allowable, providing anaerobic conditions into the system. The analyzes of the well water showed the following results: oxygen saturation was 7.72 mg/L, turbidity was 0.81 UNT, the true color was 2.6 mg Pt/L, pH of 5.02 and the temperature was 26.7ºC, while the concentration of heterotrophic bacteria was 2.489 log UFC/mL and that there was absence of bacteria in the coliforms. We can conclude that the treatment process used is not efficient, being able to compromise the water quality of the receptor body or the land irrigated by this effluent; and that this process does not influence directly on the well water quality.

Keywords: swine breeding, organic waste, reuse of waste.