

**Title: ANALYSIS OF PHYSICAL AND CHEMICAL WASTE IN SWINE DIGESTERS SOLID IN SUMMER PERIOD**

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**Summary:**

The swine production in Brazil ranked third in the world, being the fourth largest export pork. Lot of waste is generated pollution potential. Correct management can reduce environmental impacts, using biomass to produce biogas through anaerobic digestion. This study evaluated physical-chemical results in pig manure and continuous digester effluent. An essay in four continuous digesters laboratory scale was carried out in the summer period, with capacity of 60 liters of pig substrate maintained at Embrapa Dairy Cattle, Juiz de Fora / MG, for 60 days. The slurry was diluted in water and homogenized manually until the solids content of 6 to 8%. The analyzes were performed at the initial supply, zero time, 15, 30, 45 and 60 / day hydraulic retention. Samples were taken of the initial supply and the effluent of the four digesters. It was analyzed total solids (TS), weighing the empty beaker and then, the weight of beaker plus sample (wet weight). They were taken to forced circulation air oven at 105 ° C for 24h. After drying the material was weighed again. The volatile solids (VS), was carried out through ST, after drying the sample, it was directed to an oven, reaching a temperature of 550 ° C for two hours and then weighed again. The solid pellet was made from the homogenized samples in a Imhoff cone, up to the mark of one liter. After 45 minutes, the sample was stirred gently for 15 minutes and the volume recorded in milliliters; Acidity and alkalinity were measured by titration method, with the stipulated pH. It was noted observed digestion reduced total solids during the digestion, the settleable solids reduced slightly in the first for night and the course of the daily supply kept the solids level. The alkalinity increased in the first half and soon had a high reduction, keeping the next 15 days and increasing in the last collection. The acidity remained stable during the 60 days of retention with the pH remaining in the average of 6.4. The results suggest anaerobic digestion period of 60 days is enough to reduce pollution potencial of pig slurry.

**Keywords:** anaerobic digestion, pathogenic microorganisms, pollution potential

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