

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

CHEMICAL CHARACTERISTICS OF BIOFERTILIZER OF MANURE FROM FINISHING SWINE FEEDING DIETS WITH DIFFERENT NET ENERGY LEVELS

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The efficiency of anaerobic digestion of pig manure depends on the ideal conditions during the process, such as pH, alkalinity, carbon: nitrogen ratio, among others, which may reduce and stabilize the organic matter improving the minerals availability in the biofertilizers and reducing its polluting potential in the environment. This assay aimed to assess the effluents (biofertilizer) chemical features of semicontinuous digesters of manure from pigs feeding diets with different net energy (NE) levels. Manure was collected from swine averaging 100 kg of body weight, feeding diets containing 2300; 2380; 2460; 2540; 2620 or 2700 kcal NE kg⁻¹ of diet. Twelve semicontinuous digesters (7.5 L) were operated for 120 days, and 30 days of hydraulic retention time. Weekly, the total solids (TS), volatile solids (VS), fixed solids (FS), total Kjeldahl nitrogen (TKN) and total phosphorus (P) were analyzed. The experimental design was completely randomized with six treatments and four replications. All data were submitted to variance analysis and when significant, the Tukey Test was used. The NE levels in the diet did not affect TS and FS contents in the biofertilizer (average of 3.63 and 1.29%), however, a difference was observed for VS in which was observed the higher content (2.79%) at 2700 kcal kg⁻¹ of NE while the levels 2300, 2380, 2460, 2540 e 2620 kcal kg⁻¹ showed 1.85; 1.76; 2.50; 2.38 and 2.21%, respectively. The higher the level of net energy, the higher was the TKN and P content, with levels of 1.01; 1.26; 1.45; 1.62; 1.43 e 1.93% of TKN, and 1.51; 1.47; 1.68; 1.76; 1.77 e 1.98% of P, respectively. We conclude that dietary NE levels of 2300 to 2700 kcal kg⁻¹ in the diet affect most of the chemical features of biofertilizer of manure from finishing swine (VS, TKN and P). When higher levels of NE are used in swine feed, higher content of these chemical features are found in the biofertilizer.

Keywords: nutrition and manure, livestock waste, pig production

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