TREATMENT OF PIG WASTE BY EARTHWORM (*Perionyx excavatus*)

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Summary

Treatment of pig waste faces difficulties due to large amount of manure generated while the treatment system is overload or ineffective. In order to reduce the pressure on treatment systems, reduce initial waste coupling with added economic value, this study focused on the application of earthworm (*Perionyx excavatus*) for volarizing manure and rice bran which are major waste components of pig waste. The experiments were conducted at the temperature between 20-26 ^{o}C in the experimental storehouse of the Faculty of Environment, Vietnam National University of Agriculture. In the experiment to evaluate worm densities affecting treatment time, the intitial worm densities were set at 0; 781; 1627 and 2213 worm/m^2 corresponding to 0 g, 30 g, 50 g and 70 g. The results shows that total time required to complete fed manure is 89 days, 36 days, 28 days and 31 days, respectively. At the density of 1627 worms/m^2, pig manure was fastest treated, and best growth rate was achieved. The weight of worms increased 447.92 g/m^2. In the experiment to evaluate the impact of rice bran on growth and development of earthworm, the rate of rice bran/substrate was set at 0%, 5%, 10% and 20%. The results showed that adding rice bran led to a decrease of worm density and its weight compared to those was not added. The converted manure quality was high in N, P, K contents (0.49%, 1.52%, 0.44%). *E.coli* and *Salmonella* contents were 3×10^5 CFU/ml and 0.5×10^1 CFU/ml.

Keywords: *Livestock waste, nutritional recovery, biomass, earth worms, Perionyx excavatus.*