Narumon Vongsawan 2009: Digestion Efficiency of Community Garbage Decompost by Mixing with Fine-Textured Soils under Different Amount of Watering. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Assistant Professor Suthep Thongpae, Ph.D. 143 pages.

The study on digestion efficiency of community garbage decompost by mixing with fine-textured soil under different amount of watering was done in 2 experiments. The first was conducted in 2x3x3 factorial in CRD with 3 replications. This experiment involved with 3 factors, mixing and alternate layering, followed by garbage: soil in the ratio 1:1, 3:1, and 6:1 by weight and finally watering consisted of non-watering, watering 10 liters (water:garbage 1:2) and 20 liters (water:garbage 1:1) per week. The second experiment was conducted in 2x3 factorial in CRD with 3 replications. This experiment involved with 2 factors, inside and outside the house, followed by garbage: soil in the ratio 1:1, 3:1, and 6:1 by volume. The experiment was done in rainy season during June – September 2008.

The results indicated that mixing and alternate layering of garbage with soil resulted no significantly difference in decomposed efficiency according to C/N ratio of the compost which gave the value of 17.53 and 16.92 respectively. The content of nitrogen phosphorus and potassium in the compost from mixing were 0.28, 0.30 and 1.51 % respectively which higher than the content in the compost from alternate layering significantly difference. As compare to the garbage:soil ratio, in the first experiment, the ratio 1:1 showed the lowest decomposed efficiency. The C/N ratio of the compost from the ratio 1:1, 3:1 and 6:1 were 19.83, 15.03 and 16.89 respectively. The content of nitrogen and phosphorus in the compost from the ratio 6:1 were 0.35 and 0.36 % respectively which higher than the others but the content of potassium was 1.26 % that lower than the others. According to the watering, no watering tended to give more decomposed efficiency and also higher content of nitrogen and phosphorus in the compost. For the second experiment, all garbage:soil ratios and also inside and outside the house gave no significantly difference on the decomposed efficiency.

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