

Paisan Rimchala 2012: The Size of the Waste Materials from Fruits and Fruit Peels and the Mixing Ratio with Fine-Textured Soils on Their Decomposition Efficiency for Compost. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Assistant Professor Suthep Thongpae, Ph.D. 104 pages.

The different waste material size and the ratio of waste material and fine-textured soil on the decomposition efficiency were studied at The Royal Initiated Soil Waste Disposal and Waste Water Treatment Technology Extension, Eastern, Chanthaburi Province. The 3x3 factorial in Completely Randomized Design with 3 replications was conducted. The first factor was waste material size at >3 cm, 1-3 cm and <1 cm of fruits and fruit peels. The second factor was ratio by weight of waste material : fine-textured soil at 1:1, 3:1 and 6:1. The decomposition efficiency was estimated after 45 days of the decomposition by using C/N ratio of the compost. The results indicated that the waste material size and the ratio of waste material : fine-textured soil did not showed the significantly difference in the decomposition efficiency. The waste material size 1-3 cm mixed with fine-textured soil at the ratio 1:1 tended to give the highest decomposition efficiency (C/N ratio = 6.02). However, higher ratios of waste material : fine-textured soil gave higher content of organic matter, N and K in the compost significantly difference except the content of P in all treatments were not significantly difference.

The quality of compost from all treatments were compared with the standard from the Department of Agriculture. The results showed that only waste material size at 1-3 cm mixed with fine-textured soil at the ratio 1:1 gave the content of nitrogen in compost higher than the limitation. However the content of P and K and C/N ratio of the compost in all treatments were higher than the limitation. But the content of organic matter in all treatments lower than the limitation.

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Thesis Advisor's signature