Kasinee Suttichart 2011: Pilot Plant for Compost Production from Food Waste. Master of Science (Biology), Major Field: Biology, Department of Zoology. Thesis Advisor: Associate Professor Monchan Maketon, Ph.D. 129 pages.

The objective of this research is to select some beneficial microorganisms that can degrade organic matter in food waste to become compost and study for an appropriate condition of compost production. Pilot plant was designed by our group and fabricated from Therm Engineering Co., and installed at the second central food center. It consists of two cylindrical fermenters lined horizontally one above the other. Inside each fermenter was equipped with a screw conveyor in order to circulate food waste. Initially six experiments were performed with the temperature of 40^{O}C and 70^{O}C for the fermenters upper and lower respectively. Five percents of the selected microorganisms were added but the compost obtained became bulky mass. When sawdust was added as a bulking agent, the moisture could be decreased by 10% but was not stable. Therefore, the Pilot plant was adjusted and two experiments were performed. Results showed that when temperature of the upper fermenter was 40^{O}C and the lower fermenter was 45^{O}C, better compost were obtained because it has small size with 11.00±0.60 %moisture, C/N ratio of 15.46±0.16, total nitrogen 3.15±0.04%, available phosphate 1.43±0.02% and potash 0.33±0.01%. pH of the compost is acidic which might resulted from an incomplete process, therefore the compost should be piled and left for few weeks before uses.

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