Pornpen Photong 2008: The Comparison of Composts Efficiency in Improvement of Properties and Plant Nutrient Adsorption of Kamphaeng Sean Soil Series. Master of Science (Agriculture), Major Field: Soil Science, Department of Soil Science. Thesis Advisor: Assistant Professor Chawalit Hongprayoon, Ph.D. 203 pages.

Four types of compost, rice straw compost, eucalyptus bark compost, bagasse compost and pulp industry sewage sludge compost were compare for soil properties and nutrient adsorption effective in Kamphaeng Saen soil series. The completely randomized experimental design was applied with 10 treatments and 4 replications. Application at 4 types of compost in combination with K_2SO_4 application with or without plant. Each compost was applied at the rate of 6 ton/rai in combination with/without 50 kg/rai of K_2SO_4. Soil moisture was maintained at field capacity in all treatments for 42 days. Soils were leached with one pore volume of water in every 7 days. The leached and soils were analyze for soil properties and nutrient adsorption.

The quality for soil adsorption and decomposition rate at the composts compared for 42 days, with and without plant. The experiment showed that composts significantly increased soil organic matter, EC and CEC. Decomposition of soil was slow during 0-42 days. Rice straw composts increases highest total nitrogen and exchangeable potassium in soil whereas sewage sludge compost has the highest available phosphorus. Decomposition of soil organic matter with growing plant was similar to without plant experiment. The available nutrients in soil were found lower in plant experiments.

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