Patima Ousungnoen 2004: Effects of Various Manures Application on Tuber Yield and Starch Content of Cassava (*Manihot esculenta* Crantz), and on Nutritive Value of Dried Cassava Chips. Master of Science (Economic Botany), Major Field: Economic Botany, Division of Science. Thesis Advisor: Associate Professor Kanapol Jutamanee, D. Agr. 165 pages.
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A study on animal manures application as organic fertilizer on yield and starch content of the tuber as well as the nutritive value of cassava chips of the cassava plant at aged 8, 9.5, and 11months was conducted by using KU-50 cassava variety grown in Nampong soil type at Tapioca Research and Development Center, Thai Tapioca Development Institute, Nakhon Ratchasima province during 2002-2003. The experimental cassava plot was divided into 24 of 10 x 10 meters sub-plots and utilizing 6 × 3 Factorial in RCB experimental design. First factor was manures fertilizer as follows 1. No fertilizer application; 2. Chemical fertilizer 15-15-15 at 50 kg/rai; 3. Chicken manure with litter at 1000 kg/rai; 4. Pig manure at 500 kg/rai; 5. Cow manure at 500 kg/rai; and 6. Sludge from biogas digester at 500 kg/rai. All animal manures were applied during the soil preparation and the chemical fertilizer was applied at 2 months after planting and another factor was harvested at 8, 9.5 and 11 month of age.

Results of the study have indicated that application of every kind of manures have significantly produced higher yield of fresh tuber than the chemical fertilizer and no fertilizer application. Cow manure, broiler manure with litter, sludge from biogass digester, pig manure, chemical fertilizer and no fertilizer application have produced average yield of fresh tuber of 3350, 3062, 2957, 2943, 2824 and 2760 kg/rai, respectively. All manure fertilizers produced significantly higher yield of fresh tuber and tended to provided higher number and weight of the tuber than the chemical fertilizer and no fertilizer application. Cassava on cow manure and broiler manure with litter fertilizer have produced the significantly higher starch content in the tuber (22.26 and 21.84 %, respectively) than those on pig manure, sludge from biogas digester, chemical fertilizer and no fertilizer application which have provided starch content in fresh tuber of 20.6, 18.95, 19.7 and 20.5 %, respectively. Application of every kind of manure have provided significantly better cassava chips yield percentage than chemical fertilizer and no fertilizer application.

Results of the study have also shown that cassava should be fertilized with cow manure and harvested at age 11 months for the optimum yield of fresh tuber or harvested at age 8 months for the optimum nutritive value of the cassava chips produced. Sludge from biogas digester has produced a significantly higher fat, protein, nitrogen, phosphorus and zinc in the cassava chips than the other manure.

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