

Supinya Songgay 2009: Influence of Water Treatment Plant Sludge on Mineral Nutrients Accumulation of Physic Nut (*Jatropha curcas* Linn.). Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Associate Professor Wallop Arirob, Dr.Agr.Sci. 111 pages.

The research of growth of physic nut (*Jatropha curcas* Linn.) varieties of CK-B47, CK-A87, CK-B22, CK-A79 and CK -B34 during 2 to 7 months after planting with stock using water treatment plant sludge at ratio of soil per sediment on 1:9, 2:8, 3:7, 4:6, 5:5, 6:4 and 100% of sediment were carried out. It found that CK-B34 had maximum leaf areas about 51.39 cm². The other varieties of CK-A79, CK-B22, CK-A87 and CK-B47 were of 49.79, 49.65, 49.90 and 48.19 cm², respectively.

Furthermore, the study of efficiency on accumulated nutrients in leaves showed that magnesium, potassium and copper had high level of accumulation in ratio of soil per sediment on 6:4 but calcium and iron had high level of accumulation in ratio of soil per sediment on 4:6. In details, maximum accumulated level of calcium was of 65.220 mg/L. in CK-B47, magnesium was of 16.333 mg/L. in CK-B22, potassium was of 26.557 mg/L. in CK-B34, iron was of 1.660 mg/L. in CK-B47 and copper was of 0.157 mg/L. in CK-B34.

In conclusion, it suggested that the high efficiency on growth and accumulated nutrients of physic nut were CK-B47, CK-B22 and CK-B34, and the ratio of soil per sediment were of 4:6 and 6:4.

Student's signature

Thesis Advisor's signature

____ / ____ / ____