Response of Creeping Signal Grass (Brachiaria humidicola) to Green Manures and Mixed Fertilizers on Ubon Soil Series in Thung Kula Ronghai *

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Abstract.

This study was conducted to investigate the effect of green manures and mixed fertilizers application on dry matter yield and chemical composition of creeping signal grass (Brachiaria humidicola) on Ubon soil series in Thung Kula Ronghai location, Roi - Et province, during April 1992 to October 1996. The experimental design was split plot in randomized complete block which main plots comprised of control and 3 legume species for green manure viz Crotalaria microsapa, Crotalaria juncea and Sesbania rostrata. The sub-plots were control (0-0-0) and 3 mixed fertilizers viz 0 - 10 - 10 , 10 - 10 - 10 and 20 - 10 - 10 kg N - P₂O₅ - K₂O/rai/year. Grasses were planted 15 days after green manure ploughing. The result was shown that the bio-mass yield (cut at 60 days) of C. microsapa and C. juncea were higher than S. rostrata, but all three legume species for green manure gave very low yield, so there was no effect of green manure on soil chemical properties as well as dry matter yield and nutritive value of creeping signal grass.

Dry matter yield of creeping signal grass had increased from 1,592.5 kg/raii (control) to 2,035.2, 2,180.6 and 2,317.6 kg/rai by mixed fertilizers application 0 - 10 - 10, 10 - 10 - 10 and 20 - 10 - 10 kg N - P₂O₅ - K₂O/raiy/year respectively and the net profit had tendency to increase in the same way. About nutritive value, with higher nitrogen rate of mixed fertilizer (20 - 10 - 10 ), the higher protein percentage of forage grass (9.1 %protein) was obtained. The phosphorus and potassium percentage were increased by chemical fertilizers application except hemicellulose and however ADF NDF and NDS content were not changed throughout the experiment.

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