

When consideration on the type of peat in this study, the percentage of lignin in hemist type is higher than fibrist type because in hemist organic material is more decomposed than fibrist organic material. The percentage of lignin in Nw soil serie is higher than Kd soil serie because in this study the percentage of organic matter in Nw soil serie is more than Kd soil serie.

Peat samples were collected for humic acid extraction, by dissolved in 0.5 N NaOH and precipitated in 6 M HCl. It finds that the quantity of humic acid is between 16.19-44.65%, humic acid isolated from peat in Bacho swamp (28.38%) is higher than Todaeng swamp (27.85%), development zone (30.67%) is higher than conservation zone (25.04%) and Nw soil serie (28.90%) is higher than Kd soil serie (25.52%). For the properties of humic acid, CEC of humic acid isolated from Bacho swamp is between 173.06-329.43 meq./100g. and Todaeng swamp is between 162.30-288.31 meq./100g., the percentage of ash of humic acid isolated from Bacho swamp is between 7.02-45.98% and Todaeng swamp is between 10.31-47.85%. The elemental groups of humic acid are total nitrogen, total phosphorus, total potassium and organic carbon find not difference in each sample. The functional groups of humic acid are CO H groups, phenolic OH groups and total acidity showed humic acid isolated from peat in Bacho swamp are higher acidity than Todaeng swamp.

To compare the utilization of peat for humic acid extraction from the both swamp, in this study peat in Bacho

swamp is more utilized than Todaeng swamp because:

-The composition of peat in Bacho swamp have the percentage of lignin that one of important initial material for humic acid extraction more than Todaeng swamp.

-The quantity of humic acid isolated from Bacho swamp is higher than Todaeng swamp. Consideration on the properties of humic acid, CEC of humic acid isolated from Bacho swamp is higher than Todaeng swamp and the percentage of ash is lower than Todaeng swamp.

And in this study, the quantity of humic acid isolated from peat in development zone is higher than conservation zone; hemist type is higher than fibrist type and Nw soil serie is higher than Kd soil serie.

The utilization of humic acid that extracted from this study in the paddy fields was between May-October 1988 by rice-RD 23 in Rangae soil serie, 16-20-0 was basal-fertilizer and urea(20%N) was top dressing-fertilizer. The experiment was designed by using "randomize complete block design". There were 5 treatments therefore; t1 was control, t2,t3 and t4 were applied basal fertilizer 20 kg./rai but t3 plus humic acid 1 litre/rai, t4 plus humic acid 2 litre/rai, t5 was applied basal fertilizer 40 kg./rai. And every treatments were applied top dressing fertilizer 10 kg./rai after transplanted seedling 45 days.

Harvested the rice plant when the age were about 110

days. It finds that, the yield of rice in t5 is the highest, t1 is the lowest and the yield of rice in t5 is higher than t2 10.35%. Consideration on the yields components of rice, in the treatments that applied humic acid have the effect on the rice growth in tillering stage, especially increased the height and the tiller number of the plant. In harvested, the yield components in t4 have the high in the tiller number, the number of panicles per hill, the length of panicle and the average number of grain per panicle but the percentage of incompleting grains per panicle is so very high, therefore the yield of rice in t4 is rather too low.

The yield components in t3, the average number of grain per panicle is the lowest when compare with the treatments that applied the same rate of fertilizer, although the percentage of incompleting grains per panicle is the lowest. Therefore the yield of rice in t3 is rather too low.

The reason why humic acid have the less effect in the paddy fields for this study are the following:

-The efficiency of carbohydrate accumulated in treatment that applied humic acid 2 lit./rai.

-The possible harmful effect of humic acid which uptake fertilizer for the height of rice plant in treatment that applied humic acid 2 lit./rai.

-The duration on applying humic acid and fertilizer in the paddy fields.

-The characteristics of Rangae soil serie.*

For the further study should be study the effect of humic acid in the different environmental conditions. Especially the experiment crop should not have the high variation of the soil property , and the percentage of organic matter in the soil should be rather too low.