

Optimization of Horticultural Crops by Using the Peats from Rawa Pening Lake as Soil Conditioner

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Abstract : Rawa Pening is a lake at the Ambarawa Basin in Central Java, Indonesia. It serves as a source of power (hydroelectricity), irrigation, and flood control. The potential of this lake is getting worse by the presence of aquatic plants (Eichhornia crassipes) that grows wild, and it can make the lake covered by the cumulation of rotten E. crassipes. This cumulation causes the sediment formation which has high organic material composition. Sediment formation will be lead into a shallowing of the lake and affect water's quality. The deposition of organic material produces methane gas and hydrogen sulfide, which in rain would turn the water muddy and decompose. Decomposition occurring in the water due to microbe activity in lake's water. The shallowing of Rawa Pening Lake not only will physically can reduce water discharge, but it also has ecologically major impact on water organism. The condition of Rawa Pening Lake peats can not be considered as unimportant issue. One of the solutions that can be applied is by using the peats as a compound materials on growing horticultural crops because the organic materials content on the mineral soil is low, particularly on an old soils. The horticultural crops required organic materials for growth promoting. The horticultural crops that use in this research is mustard cabbage (Brassica sp.). Using Rawa Pening's peats as the medium of plants with high organic materials that also can ameliorate soil's physical properties, and indirectly serves as soil conditioner. Research will be focus on the peat's contents and mustard cabbage product's content. The contents that will be examined is the N-available, Ca, Mg, K, P, and C-organic. The analysis of Ca, Mg, and K is use soil base saturation measurement method and extracting soil is use NH₄OAC solution. The aim of this study is to use the peats of Rawa Pening Lake as soil conditioner and increase the productivity of Brassica sp.

Keywords : Brassica sp., peats, rawa pening lake, soil conditioner

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