POPULATION OF SOIL MICROORGANISM IN DIFFERENT DEPTH OF PEAT SOIL

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Degree of Bachelor of Science (Hons.) Plantation
Management and Technology
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CANDIDATES DECLARATION

This Final Year Project is a partial of the requirement for a Degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknolgi MARA.

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ABSTRACT

Peat soil contains high organic matter and mineral for support plant growth. The soil contain a million number of microorganism either bacteria or fungi. There is a bio- indicator that used to determine the soil fertility and enhance plant productivity. Bacteria and fungi play an important role in mineralization process to supply the nutrient for plant the nutrient are such as N, P, K, Mg, Ca and Zn. The population of bacteria and fungi in peat soil is influenced by various factor that was conductive their growth and development such as moisture content, temperature, nutrient status and peat soil properties. This study was to determine the population of soil microorganism and to identify factors that attributes to the population of soil microbe at different depth of peat soil. Soil sample were sampled at Ladang FELCRA Sri Mendapat, Jasin Melaka. The population of microbe were determine through colony forming unit (CFU), the nutrient content were determine using ICP – OES and the pH was determine using water (1:2.5). The moisture also was determined through Gravimetric Measurement (weight basis). Parameter in this study consists of population of microbe, soil pH, soil nutrient (P, K, Mg, Ca, and Zn) and moisture content. Result shows the population of bacteria was significant at the T3 (30- 45 cm) and fungi at T1 (0 - 15 cm) compare to others depth. Population of microbe was decreasing along with soil depth. Bacteria shown there was strong relationship correlated with K, Mg, and pH. Whereby there was no relationship between population of fungi and other factors. The good water level was important in oil palm plantation in order to ensure the population of microorganism is optimum to done their mineralization process.