

**THE EFFECTS OF SOIL COMPACTION AND SOIL WATER TOWARDS
THE OIL PALM YIELD IN THE PEAT SOIL**

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**Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Plantation Management and Technology
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DECLARATION

This Final Year Project is a partial fulfilment of the requirements for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi Mara.

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ABSTRACT

THE EFFECT OF SOIL COMPACTION AND SOIL WATER TOWARDS THE OIL PALM YIELD IN THE PEAT SOIL

A study about the effect of soil compaction and soil water towards the oil palm yield in the peat soil has been conducted at Jenuang, Felcra Sri Mendapat, Jasin Malacca and soil science laboratory at UiTM Jasin, Malacca. The objective of this study is to measure the bulk density and soil water of the soil sample and to identify the relationship between bulk density and soil water on the peat affecting the yields. The data has been collected by soil sampling and yields from the plantations by using systematic sampling method and has been analyze by Minitab 16 software. The soil sample are taken using soil auger and core ring which is to determine the soil water content (%) and soil bulk density(g/cm^3) at 12 different plot with three replication which is started from February, March and April 2015. 12 sample of soil water and 12 sample of bulk density are taken each month. The mean of bulk density for the 1st month is $0.74 \text{ g}/\text{cm}^3$, for the 2nd month is $0.64 \text{ g}/\text{cm}^3$ and for the 3rd month are $0.67 \text{ g}/\text{cm}^3$. The mean for soil water for the 1st month is 41.1%, for the 2nd month is 40.86% and for the 3rd month are 40.67%. The result has been related with the yields and it shows negative relationship between the variable. That means, there is no effect to the oil palm yields. The P-Value for the correlation between bulk density and yield is 0.062 and it higher than 0.05 and the Pearson correlation is -0.314 which means there is strong negative correlation between those variables. The P-Value for the correlation between soil water and yield is 0.862 and it higher than 0.05 and the Pearson correlation is -0.030 which means there is strong negative correlation between those variables. The result of the study show there is no effect of soil compaction and soil water to the oil palm yields on the peat soil area and it give positive effect. It is recommended that field traffic (farm machinery) and animal trampling is one of soil management to compact the soil structure which is good for oil palm tree that are planted at the organic soil or peat soil area.