UNIVERSITI TEKNOLOGI MARA

MEASUREMENT OF COMPACTION OF TRACTOR TYRES UNDER OIL PALM PLANTATION SOILS IN FELCRA BERHAD KAWASAN SRI MENDAPAT

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Final year project report submitted in partial fulfillment of the requirement for the degree of
Bachelor of Science (Hons.) Plantation Technology and Management

Faculty of Plantation and Agrotechnology

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CANDIDATE'S DECLARATION

I declare that the work in this Final Year project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. The Final Year project report has not been submitted to any other academic institution or non-academic institution for any other degree or qualification

In the event that my Final Year Project is found to violate the conditions mention above, I voluntarily waive the right of conferment of my bachelor degree and agree to be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

Originated from West Africa, the oil palm (*Elaeis guineensis*) was grown widely in the tropics and is now grown in 16 or more countries. However, the major producer of palm oil is in South East Asia (SEA) with Malaysia and Indonesia together accounting for around 83 % of world palm oil production in 2001. Mechanisation as a means of increasing labour efficiency and productivity has been successfully implemented in the Malaysian oil palm industry. Mechanization is now widely accepted and adopted, especially for the collection and evacuation of fresh fruit bunches and the application of fertilizer, pesticide and herbicide. Soil compaction has become the major problem in the modern agriculture. Overuse of machinery and repeated passed of heavy axle load had adverse effect to the plantation soil over the years. The compaction increases soil strength as well as decreasing the soil physical fertility through shrinking of the storage and supply of water and nutrients leading to more fertiliser input required thus increasing the production cost. This study was conducted by taking 20 soil samples using Completely Randomized Design (CRD) in the field plot according to the harvester path. The treatments are assigned completely at random so that each experimental unit has the same chance of receiving any treatment. The samples were taken under the frond width of the oil palm tree. The compaction level of the soil was taken at the depth of 3 inch, 6 inch and 9 inch. The compaction testing was replicated 3 times for each sample. The moisture content relationships with the soil compaction were also successfully being tested and prove that there was a positive relationship between them. According to the depth of the soil at mature and immature plot.

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