NUTRIENT LEACHING IN PEAT AND LATERITIC SOIL TREATED WITH INORGANIC AND ORGANIC FERTILISER.

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Final Year Project Report Submitted in
Partial Fulfilment of the Requirement for the
Degree of Bachelor of Science (Hons.) Plantation Technology and Management
In the Faculty of Plantation and Agrotechnology
Universiti Teknology MARA

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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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Name: NUR AIN IZZATI BT ZAINI

I hereby declare that I have checked this project and in my opinion, this project is adequate in terms of scope and quality for the award of the degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

Signature: .....

Name of Supervisor: PROF. MADYA DR. ADZMI YAACOB

Position: .....

Date: 22/7/2016.

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Alhamdulillah, A greatest thanks to Allah for His bless and kindness, I manage to complete my Final Year Project perfectly with the title of Nutrient Leaching in Peat and Lateritic Soil Treated with Inorganic and Organic Fertilizer.

On top of that, I also successfully prepared this written research for FPA 690 within the time given. This written research was asked to be complete by AT220 part 6 student as one of the partial fulfilment of requirement for degree of Bachelor of Science (Hons.) Plantation Technology and Management.

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ABSTRACT

NUTRIENT LEACHING IN PEAT AND LATERITIC SOIL TREATED WITH INORGANIC AND ORGANIC FERTILISER.

Agricultural sector in Malaysia is one of the contributor to the development of Malaysian economic since few decades ago. Hectares of land have been develop for agriculture activities from small ranges of farm until large range of plantation. The continuously use of soil for agriculture purposes however turns soil less fertile. With the increasing of demand for food over years and the soil fertility problems, farmer came out with an initiative to apply fertilizer. The application of fertilizer fortunately help to overcome soil fertility problem by increase the nutrient level in soil. Basically there are two type of fertilizer use in agriculture sector which were inorganic and organic fertilizer regardless the soil type. On the other hand, fertilizer apply to soil does not remain in soil as wished. Some of fertilizer will leach out due to certain agriculture activity such as irrigation. Thus this experiment was conducted to determine which type of fertilizer is more leachable when apply on two type of soil peat and lateritic. This research was conducted at UiTM Jasin where the two type of soil was available. Experiment was done for four consecutive weeks where 0.25 kg of fertilizer was apply on both soil with bulk density of 0.4 g/cm^3 and 1.3 g/cm^3 for peat and lateritic respectively with three replication each. The irrigation water supplies every day and the leachate sample was taken weekly. The leachate taken was prepared in laboratory and run in ICP-OES to determine the nutrient available contain in leachate. Throughout this experiment, the result shows that out from four element tested, K, P, Ca, and Mg, K is more leachable compare to others. K element show significant leaching in peat soil treated with inorganic fertilizer. Therefore, it is recommended to apply organic fertilizer on peat soil to reduce leaching of nutrient and save farmers cost.

Keywords: peat soil; lateritic soil; leaching; organic fertilizer; inorganic fertiliser