UNIVERSITI TEKNOLOGI MARA

DETERMINATION OF THE RELATIONSHIP BETWEEN NDVI AND OIL PALM YIELD

MUHAMAD AZIM BIN KAMARUDDIN
2014876994

Thesis submitted in partial fulfillment

of the requirements for the degree of

Bachelor of Surveying Science and Geomatics (Hons)

Faculty of Architecture, Planning & Surveying

JULY 2018

DECLARATION

I declare that the work on this project /dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. The project/ dissertation are original and it is the result of my own work, unless otherwise indicated or acknowledge as referenced work.

In the event that my project / dissertation be found to violate the conditions mentioned above, I voluntary waive the right of conferment of my Degree of Bachelor in Surveying Science and Geomatics (Honours) and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

Name of Student : Muhamad Azim Bin Kamaruddin

Student's ID No : 2014876994

Faculty : Faculty of Architecture, Planning and Surveying

Programme : Bachelor in Surveying Science and Geomatics (Honour)

Code Programme : AP220

Project Title : Determination Relationship Between NDVI and Oil Palm

Signature :

Date :

Approved by:

I certify that I have examined the student's work and found that they are in accordance with the rules and regulations of the Department and University and fulfills the requirements for the award of the Degree of Bachelor in Surveying Science and Geomatics (Honour).

Name of Supervisor : Puan Rohayu Haron Narashid

Signature :

Date :

ABSTRACT

Oil palm is one of the crops that has high economic demand and potential for Malaysia export business. The use of NDVI as a platform to determine the greenness of vegetation has been widely introduced to monitor such crops. Because of the platform used is based on remotely sensed data, such relationship need to be determine between NDVI and oil palm to prove the use of NDVI manage to estimate the oil palm yield. Such estimation can warn the decision makers about potential reduction in crop yields and allow timely import and export decision. Remote sensing data has the potential and capability to provide spatial information for large scale plantation. Compared to ground data, remote sensing offers a simpler way of yield estimation by using satellite image. The relevant of this research is to apply the use of remote sensing in the determination of relationship between the use of NDVI with oil palm yield. This research will be using Normalized Difference (NDVI) to produce NDVI maps and determine the relationship between oil palm yield with respect of the maps produce. The aim of this study is to determine relationship between NDVI and oil palm yield. The study area of this research is at oil palm plantation in Ladang Ayer Hitam, Negeri Sembilan. The data of Sentinel-2 satellite image with 10 meter resolution and yield data of oil palm is used in this study. Processing is carried out using ERDAS Imagine software and the map produced is by using ArcMap. This research method utilizes NDVI by classify the value obtained into three categories (healthy, non-healthy and non-vege area). Regression analysis is done in order to analyze the relationship between NDVI and oil palm yield. The relationship was used to estimate the yield and to analyze the pattern production of oil palm over the study area for year 2015, 2016 and 2017.

TABLE OF CONTENT

CHAPTER THREE: RESEARCH METHODOLOGY

CHAPTER FOUR: RESULT AND ANALYSIS