

**UNIVERSITI TEKNOLOGI MARA**

**YIELD ESTIMATION COMPARISON  
OF HARUM MANIS BASED ON SAVI  
COEFFICIENT VARIATION INDEX**

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Thesis submitted in partial fulfillment  
of the requirements for the degree of  
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**Faculty of Architecture, Planning & Surveying**

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## 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.

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## ABSTRACT

Harum manis mango (MA 128) is one of the fruits that has high economic demand and potential for Malaysia export business. Because of the growing demand of Harum Manis mango, crop yield estimation is necessary. 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. In remote sensing, the appearance of soil background may influence the Harum Manis tree reflection. Choosing the right vegetation index can decrease the effect of soil background. The relevant of this research is to apply the use of remote sensing in the determination of Harum Manis yield. This research will be using Soil Adjusted Vegetation Index (SAVI) to reduce the appearance of soil background. Choosing the right density coefficient of SAVI is necessary for estimating crop yield. The aim of this study is to determine the best density coefficient of SAVI for estimating the yield of Harum Manis. The study area of this research is at Harum Manis plantation in Pusat Kecemerlangan Harum Manis Bukit Bintang, Perlis. The data of SPOT-6 satellite image with 6 meter resolution and field yield data of Harum Manis is used in this study. Processing is carried out using ERDAS Imagine software. This research method utilizes SAVI transformation with density coefficient L-0, L-0.5 and L-1. Regression analysis is done in order to analyze the relationship between each density coefficient with the yield of Harum Manis. The relationship was used to estimate the yield of Harum Manis over the study area for year 2016.

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