

**UNIVERSITI TEKNOLOGI MARA**

**ASSESSMENT OF PADDY DISEASE USING  
MULTISPECTRAL TECHNOLOGY: A STUDY  
CASE IN PERLIS**

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**BACHELOR OF SURVEYING SCIENCE AND  
GEOMATICS (HONOURS) - AP220**

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CASE IN PERLIS**

**NAJWA IMANI BINTI MOHD ALI**

Thesis submitted in fulfilment  
of the requirements for the degree of  
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**College of Built Environment, CBE.**

**AUGUST 2023**

## AUTHOR'S DECLARATION

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

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Under - Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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## **ABSTRACT**

Paddy agriculture is the most important crop in Malaysia as it provides income to smallholder farmers and ensures the food security. Meanwhile, the paddy disease problem will affect the production and the country will continue to depend on import the paddy to meet the needs of the population. This study aimed to generate the indices value of the paddy disease and identify a disease on paddy in Perlis using a multispectral technique in view of the industrial revolution 4.0 (IR4). Multispectral aerial imagery is used to achieve better accuracy in paddy disease detection. Pix4D is used to analyse the data to process the multispectral aerial images, and ArcMap is used to perform the analyses. Vegetation indices was utilised to measure the vegetation status at paddy field. The sample of paddy in Perlis shows paddy diseases such as paddy blast, brown spot, sheath blight and narrow brown spot had been detected. The results concluded that the vegetation index value for NDVI is from range 0.000 to 0.935 while for NDRE value is from -0.034 to 0.553 which provided positive linear correlations to each other's. It contributed useful information about paddy health, especially to detect paddy diseases, reduce disease risk and help farmers in Perlis to increase their paddy production according to SDG 2 which is Zero to hunger.

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