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

NAJWA IMANI BINTI MOHD ALI

BACHELOR OF SURVEYING SCIENCE AND GEOMATICS (HONOURS) - AP220

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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.

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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.

Name of Student	:	Najwa Imani Binti Mohd Ali
Student I.D. No.	:	2020835148
Programme	:	Bachelor of Surveying Science and Geomatics – AP220
Faculty	:	College of Built Environment, CBE
Thesis Title	:	Assessment of Paddy Disease using Multispectral Technology: A study case in Perlis

Signature of Student	:	……..
Date	:	August 2023

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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