

RELATIONSHIP BETWEEN TEMPERATURE AND RAINFALL WITH
PADDY HEALTHINESS BETWEEN 2013 UNTIL 2022 AT KOTA
SETAR DISTRICT, KEDAH

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RAINFALL WITH PADDY HEALTHINESS BETWEEN
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**Thesis submitted to the Universiti Teknologi MARA Malaysia
in partial fulfillment for the award of the degree of the
Bachelor of Surveying Science and Geomatics (Honours)**

AUGUST 2023

DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original, and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

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ABSTRACT

Climate change has become a major concern in the twenty-first century, and mitigation strategies for its effects have received little attention. Paddy production will be changeable due to nature and the surroundings of the area. The resulting changes could have a significant impact on paddy production. Thus, monitoring climate change indicator such as climate and weather in paddy production in Kota Setar District at Kedah is an important task to address these issues, The aim of this study is to determine the effect of temperature and rainfall for paddy plantation healthiness in Kota Setar district, Kedah. The main objective of this study is to determine the relationship between temperature and rainfall with healthiness of paddy plantations. This study used the Landsat 8 OLI satellite imagery with 9 years historical temperature and rainfall data from year 2013 to 2022 to determine the relationship of the paddy plantation healthiness with temperature and rainfall. The healthiness of paddy plantation was investigated through Normalized Difference Vegetation Index (NDVI) and Crop Growing Index (CGI). On the other hand, the land surface temperature (LST) was extracted from the Landsat 8 OLI satellite imagery. Meanwhile, the rainfall data was interpolated using inverse distance weighting (IDW) method in order to show the distribution of rainfall around Kota Setar. There were eleven (11) weather stations data was used in this study. The values that were produced were used for making the relationship. For rainfall data, the Inverse distance weighting (IDW) was used to interpolate the data. To make the relationship, the Pearson Correlations were used to know whether the healthiness of the paddy plantation was affected by temperature and rainfall. For example, on 14 February 2021, the value is -0.696. That's mean that the NDVI value was very significant with temperature in that date. The result shows that it is moderate negative relationship. This study can reveal the production of the paddy that is related to climate variable such as temperature and rainfall. Consequently, providing complete information would be helpful for Muda Agricultural Development Authority, farmer and for The Malaysian Meteorological Department.

Keywords: Paddy Plantation, NDVI, CGI, IDW, Landsat 8 OLI

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