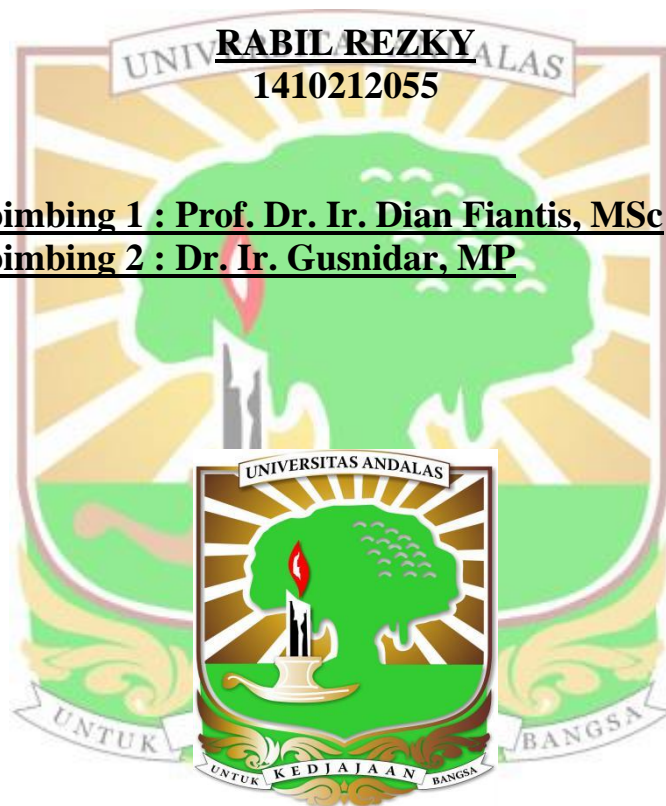


**KORELASI NILAI KADAR KARBON DENGAN INDEKS  
VEGETASI SAWAH TANAH VULKANIS GUNUNG KERINCI**

**SKRIPSI**



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*sebagai salah satu syarat untuk memperoleh  
gelar Sarjana Pertanian*

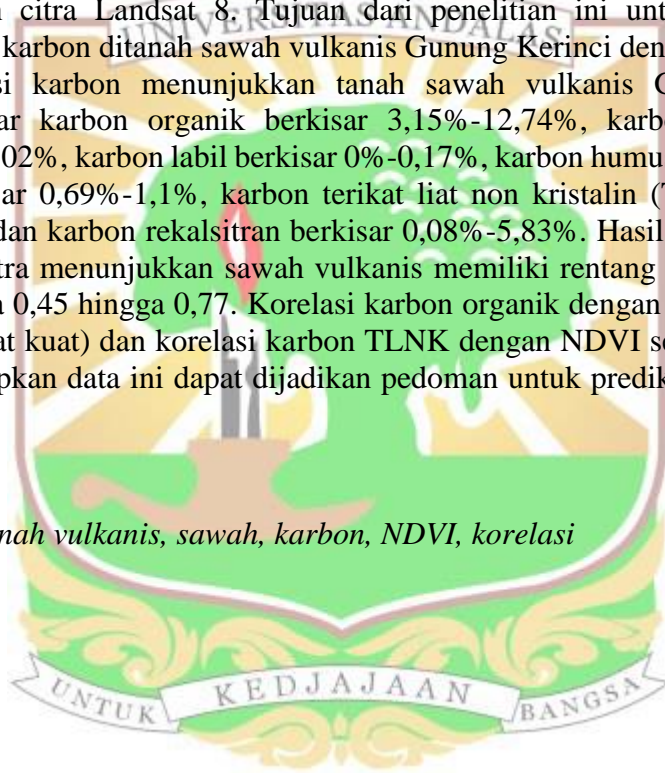
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# KORELASI NILAI KADAR KARBON DENGAN INDEKS VEGETASI SAWAH TANAH VULKANIS GUNUNG KERINCI

## ABSTRAK

Tanah vulkanis mengandung karbon organik yang tinggi. Penentuan kadar karbon organik di laboratorium memerlukan waktu, tenaga, dan biaya yang besar. Untuk itu dipandang perlu untuk mencari metoda alternatif yang efektif dan efisien dengan penggunaan teknologi penginderaan jauh. Metoda penginderaan jauh dapat menghitung nilai indeks vegetasi melalui metoda NDVI (*Normalized Difference Vegetation Index*). Pada penelitian ini dilakukan analisis karbon tanah dan perhitungan nilai indeks vegetasi sawah vulkanis Gunung Kerinci dengan memanfaatkan citra Landsat 8. Tujuan dari penelitian ini untuk menentukan korelasi kadar karbon ditanah sawah vulkanis Gunung Kerinci dengan nilai NDVI. Analisis fraksi karbon menunjukkan tanah sawah vulkanis Gunung Kerinci memiliki kadar karbon organik berkisar 3,15%-12,74%, karbon sangat labil berkisar 0%-1,02%, karbon labil berkisar 0%-0,17%, karbon humus metal kompleks (HMK) berkisar 0,69%-1,1%, karbon terikat liat non kristalin (TLNK) berkisar 0,79%-1,4%, dan karbon rekalsitran berkisar 0,08%-5,83%. Hasil interpretasi dan pengolahan citra menunjukkan sawah vulkanis memiliki rentang NDVI optimum berkisar antara 0,45 hingga 0,77. Korelasi karbon organik dengan NDVI sebesar  $r = 0,825$  (sangat kuat) dan korelasi karbon TLNK dengan NDVI sebesar  $r = 0,692$  (kuat). Diharapkan data ini dapat dijadikan pedoman untuk prediksi kadar karbon tanah.

Kata kunci: *tanah vulkanis, sawah, karbon, NDVI, korelasi*



# **CORELATION BETWEEN CARBON CONTENT AND VEGETATION INDEX IN VOLCANIC PADDY SOIL IN MOUNT KERINCI**

## **ABSTRACT**

Volcanic soils contain high organic carbon. Determination of organic carbon content in the laboratory required a lot of time, effort and cost. For this reason, it was deemed necessary to find alternative methods that were effective and efficient by using remote sensing technology. Remote sensing method can calculate value of vegetation index by using NDVI (Normalized Difference Vegetation Index) method. In this study, soil carbon analysis and value of volcanic paddy vegetation index calculation of Mount Kerinci by utilizing Landsat 8 imagery were carried out. The study was aimed to determine correlation between carbon content in volcanic paddy soils in Mount Kerinci and NDVI values. Analysis of carbon fraction showed that volcanic soil of Mount Kerinci has organic carbon levels started from 3.15% - 12.74%, very volatile carbon started from 0% - 1.02%, labile carbon started from 0% - 0.17%, humus carbon metal complex (HMK) started from 0.69% - 1.1%, carbon-bonded clay non-crystalline (TLNK) started from 0.79% - 1.4%, and recalcitrant carbon started from 0.08% - 5.83%. The results of interpretation and image processing showed that volcanic paddy soils have an optimum NDVI values started from 0.45 to 0.77. Correlation of organic carbon with NDVI was  $R = 0.825$  (very strong) and carbon correlation TLNK with NDVI was 0.692 (strong). Based on this study, these data can be used as a guide for predicting soil carbon content.

**Keywords:** *volcanic soils, paddy soils, carbon, NDVI, correlation*

