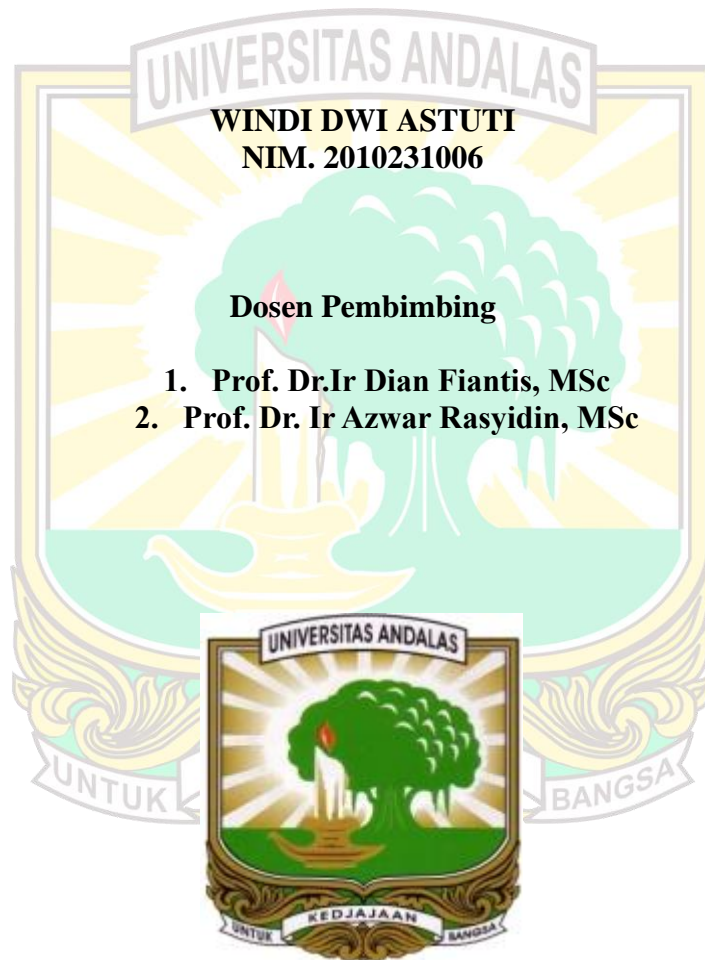


**SEBARAN SPASIAL KIMIA TANAH SAWAH LAPISAN  
BAWAH DI LAHAN KARST KABUPATEN SOLOK**

**SKRIPSI**

Oleh:



**FAKULTAS PERTANIAN  
UNIVERSITAS ANDALAS  
PADANG  
2025**

# SEBARAN SPASIAL SIFAT KIMIA TANAH SAWAH LAPISAN BAWAH DI LAHAN KARST KABUPATEN SOLOK

## ABSTRAK

Sawah fisiografi karst dengan luas 268,96 ha tersebar di Kabupaten Solok yang terdapat di dua kecamatan, yaitu Kecamatan X Koto Diatas Pantai Cermin. Penelitian bertujuan untuk memetakan sifat kimia tanah sawah fisiografi karst dan kualitas air sawah dan irigasi. Metode ordinary kriging diterapkan untuk memprediksi sifat kimia tanah sawah dan distribusinya pada wilayah di luar titik sampel. Sebanyak 10 sampel tanah diambil dengan sistem stratified random sampling pada kedalaman 20-40 cm dan 10 sampel air sawah dan irigasi yang diambil pada pintu pertama lahan sawah tersebar di Utara dan Selatan wilayah penelitian. Parameter yang dianalisis di Laboratorium meliputi; pH ( $H_2O$ , KCl, air sawah dan irigasi), EC dan TDS (Elektrometrik), C- organik (Walkley and Black), N-total (Kjeldahl), P-tersedia (Bray I), K-dd (*Leaching*), dan Ca-dd (*Leaching*). Hasil penelitian menunjukkan nilai pH tanah ( $H_2O$  dan KCl) berkisar antara (6,9-7,61 dan 5,25-6,66), pH air sawah dan irigasi ( 5,87-7,26 dan 7-7,9), EC tanah (534-668  $\mu S/cm$ ), EC air sawah dan irigasi (215-624 dan 601-677 $\mu S/cm$ ), TDS tanah (267-334 ppm), TDS air sawah dan irigasi (108-312 dan 301-339 ppm), C-organik ( 0,21-0,76%), N- total (0,12-0,32%), P-tersedia ( 7,4-14,3 ppm), K-dd ( 1,2-4,1 cmol/kg), dan Ca-dd ( 3,9-7,05 cmol/kg). Sebaran spasial sifat kimia tanah sawah lapisan bawah fisiografi karst bahwa rata-rata sifat kimia tertinggi terdapat di wilayah bagian Selatan.

*Kata kunci : Fisiografi karst, Lahan Sawah, Pemetaan Tanah Digital, Sifat Kimia Tanah.*



# SPATIAL DISTRIBUTION OF CHEMICAL PROPERTIES OF PADDY SOIL IN THE SUBSURFACE LAYER OF KARST LAND IN SOLOK REGENCY

## ABSTRACT

The karst physiographic rice fields, covering an area of 268.96 hectares, are spread across Solok Regency in two sub-districts, namely X Koto Diatas and Pantai Cermin. This study aims to map the chemical properties of the rice field soil in the karst physiographic area and the quality of paddy and irrigation water. The ordinary kriging method was applied to predict the chemical properties of rice field soil and their distribution in areas beyond the sampling points. A total of 10 soil samples were taken using a stratified random sampling system at a depth of 20-40 cm, and 10 water samples from paddy fields and irrigation were collected at the first inlet of the rice fields, distributed in the northern and southern parts of the study area. Parameters analyzed in the laboratory include: pH (H<sub>2</sub>O, KCl, paddy, and irrigation water), EC and TDS (Electrometric), C-organic (Walkley and Black), Total-N (Kjeldahl), Available P (Bray I), K-exchangeable (*Leaching*), and Ca-exchangeable (*Leaching*). The results showed that soil pH values (H<sub>2</sub>O and KCl) ranged from (6.9-7.61 and 5.25-6.66), pH values of paddy and irrigation water ranged from (5.87-7.26 and 7-7.9), soil EC (534-668  $\mu$ S/cm), paddy and irrigation water EC (215-624 and 601-677  $\mu$ S/cm), soil TDS (267-334 ppm), paddy and irrigation water TDS (108-312 and 301-339 ppm), C-organic (0.21-0.76%), Total-N (0.12-0.32%), Available P (7.4-14.3 ppm), K-exchangeable (1.2-4.1 cmol/kg), and Ca-exchangeable (3.9-7.05 cmol/kg). The spatial distribution of chemical properties in the subsoil layer of paddy fields in karst physiography shows that the highest average chemical properties are found in the southern region.

Keywords: Karst Physiography, Rice Field Land, Digital Soil Mapping, Soil Chemical Properties.