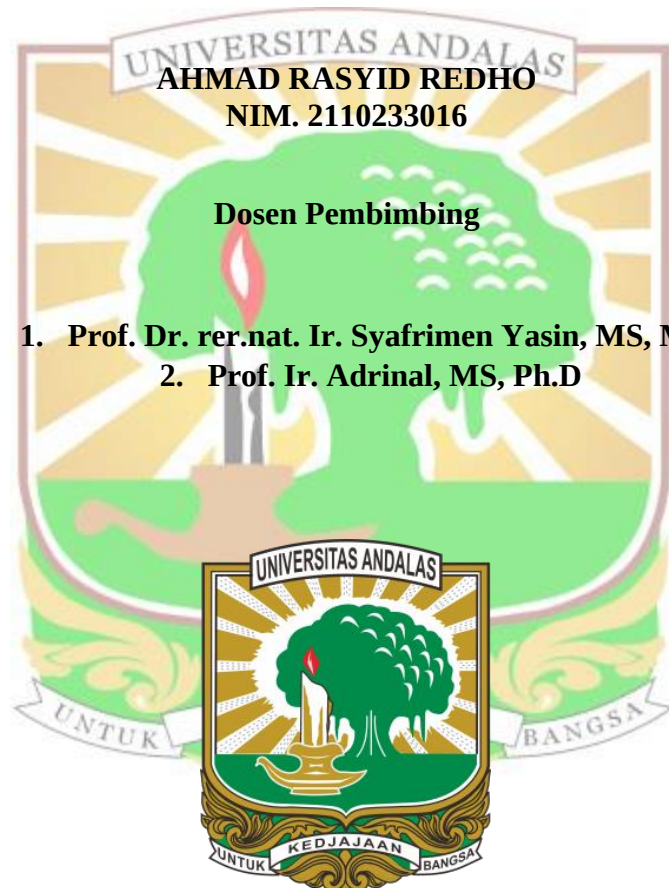


**KAJIAN KANDUNGAN UNSUR HARA MIKRO PADA
LAHAN SAWAH PASCA BANJIR LAHAR DINGIN
DI NAGARI PASIE LAWEH KABUPATEN TANAH DATAR**

SKRIPSI

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KAJIAN KANDUNGAN UNSUR HARA MIKRO PADA LAHAN SAWAH PASCA BANJIR LAHAR DINGIN DI NAGARI PASIE LAWEH KABUPATEN TANAH DATAR

ABSTRAK

Banjir lahar dingin akibat erupsi Gunung Marapi pada Mei 2024 menyebabkan penimbunan material vulkanik pada lahan sawah di Nagari Pasie Laweh, Kabupaten Tanah Datar. Endapan berupa abu, pasir, dan fragmen mineral tersebut mengubah sifat kimia tanah, khususnya unsur hara mikro yang berperan penting dalam pertumbuhan tanaman padi. Penelitian ini bertujuan menganalisis kandungan unsur hara mikro (Fe, Mn, Zn, Cu, Mo, dan B) pada lahan sawah terdampak banjir lahar dingin serta membandingkannya dengan lahan tidak terdampak. Penelitian menggunakan metode survei dengan teknik purposive random sampling pada lima lokasi, terdiri dari empat lokasi terdampak (L1–L4) dan satu lokasi kontrol (L0). Sampel tanah diambil pada kedalaman 0–20 cm dan dianalisis di Laboratorium Kimia dan Kesuburan Tanah Fakultas Pertanian Universitas Andalas. Parameter yang diamati meliputi pH, kapasitas tukar kation (KTK), Al-dd, dan unsur hara mikro menggunakan metode ekstrak Morgan-Wolf. Hasil penelitian menunjukkan bahwa lahan terdampak memiliki pH lebih masam (5,31–5,48) dan KTK lebih rendah (14,21–22,15 me/100 g) dibandingkan lahan kontrol. Kadar Al-dd meningkat pada seluruh lokasi terdampak, sedangkan unsur Fe, Mn, Zn, dan Cu mengalami peningkatan akibat akumulasi material vulkanik. Sebaliknya, unsur Mo dan B mengalami penurunan signifikan akibat hilangnya topsoil dan proses pencucian. Secara keseluruhan, endapan banjir lahar dingin menyebabkan ketidakseimbangan unsur mikro tanah sehingga berpotensi menghambat produktivitas tanaman. Perbaikan tanah melalui pengapuran dan penambahan bahan organik diperlukan untuk memulihkan kesuburan lahan sawah.

Kata kunci: Banjir Lahar Dingin, Inceptisol, Sawah, Unsur Hara Mikro

ASSESSMENT OF MICRONUTRIENT CONTENT IN PADDY FIELDS AFFECTED BY COLD LAHAR FLOODS IN PASIE LAWEH VILLAGE TANAH DATAR DISTRICT

ABSTRACT

The cold lava flood triggered by the May 2024 eruption of Mount Marapi deposited substantial volcanic materials on paddy soil in Nagari Pasie Laweh, Tanah Datar District. The deposits consisting of ash, sand, and mineral fragments, altered the soil's chemical properties, particularly the micronutrients that play essential roles in rice growth. This study was aimed to analyze the concentrations of soil micronutrients (Fe, Mn, Zn, Cu, Mo, and B) in paddy soil affected by the cold lava flood and to compare them with unaffected soil. A survey method was employed using purposive sampling across five locations, comprising four affected sites (L1–L4) and one control site (L0). Soil samples were collected from a depth of 0–20 cm and analyzed at the Soil Chemistry and Fertility Laboratory, Faculty of Agriculture, Universitas Andalas. Observed parameters include pH, cation exchange capacity (CEC), exchangeable Al, and micronutrient contents using the Morgan-Wolf extraction method. The results indicated that the affected fields exhibited more acidic pH values (5.31–5.48) and lower CEC (14.21–22.15 cmol/kg) compared to the control site. Exchangeable Al increased across all affected locations, while Fe, Mn, Zn, and Cu levels increased due to the accumulation of volcanic materials. In contrast, Mo and B showed significant decline as a result of topsoil loss and leaching processes. Overall, the lava deposits induced micronutrient imbalances that may hinder crop productivity. Soil improvement through liming and the addition of organic matter is required to restore the fertility of these paddy fields.

Keywords: Cold Lava Flood, Inceptisol, Micronutrients, Paddy Fields