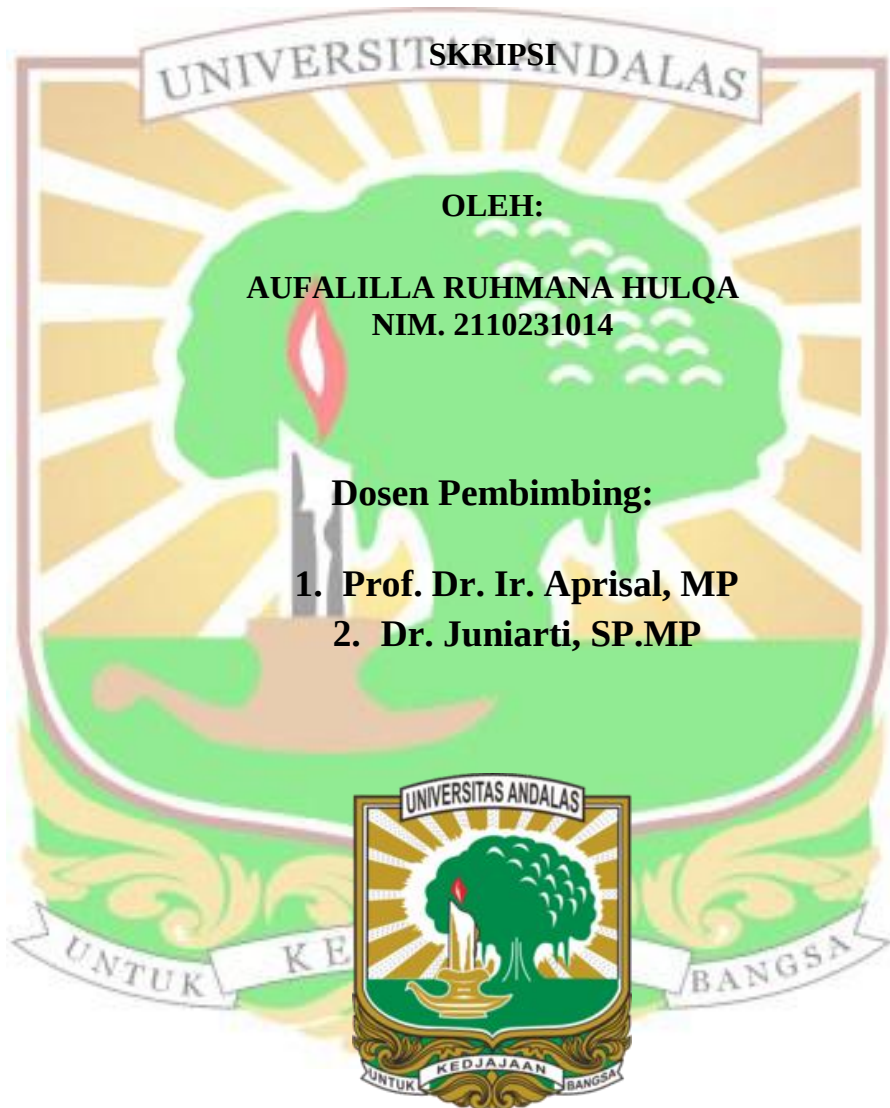
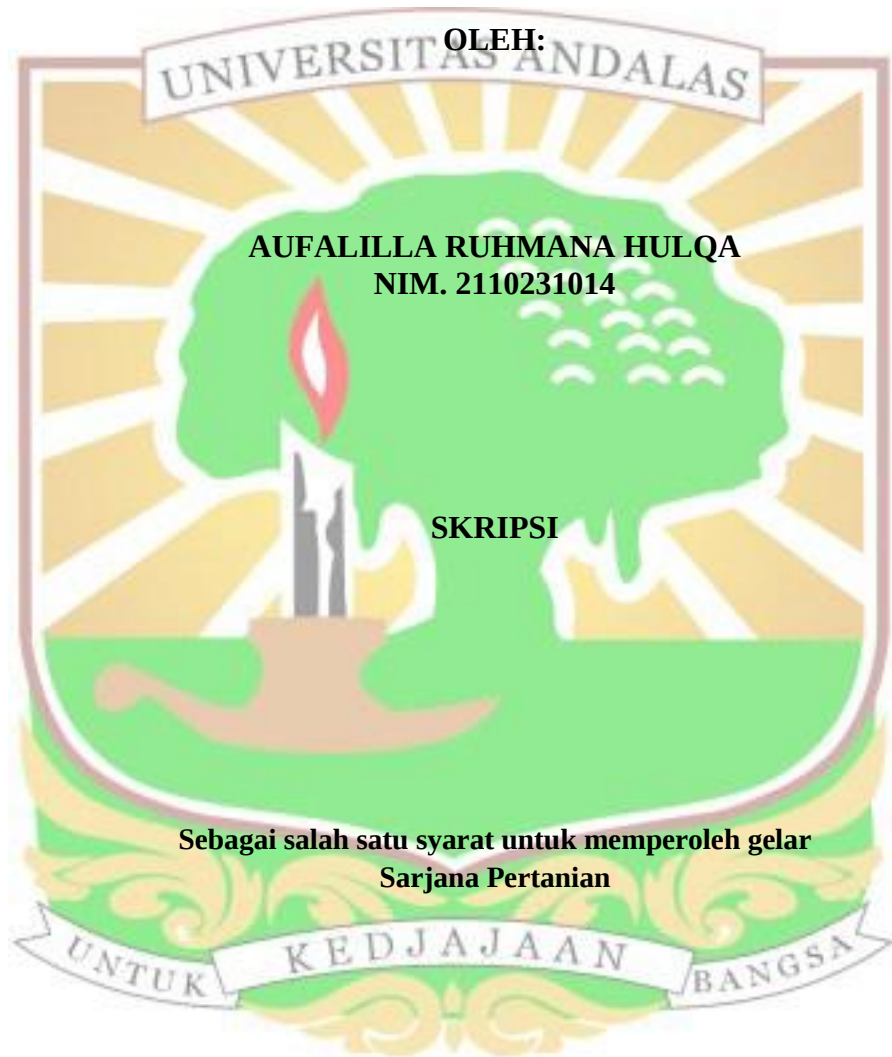


**ANALISIS SIFAT FISIKA TANAH BERDASARKAN
KELERENGAN PADA LAHAN HORTIKULTURA
TERDAMPAK ERUPSI GUNUNG MARAPI
DI NAGARI BATU PALANO KABUPATEN AGAM**



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ABSTRAK

Lahan hortikultura di Nagari Batu Palano, Kabupaten Agam, merupakan kawasan budidaya intensif yang memanfaatkan berbagai kelas kelerengan untuk tanaman sayuran. Erupsi Gunung Marapi pada 23 Desember 2023 menyebabkan lahan hortikultura di Nagari Batu Palano tertutup material abu dan pasir vulkanik dengan ketebalan bervariasi, yang berdampak pada terganggunya aktivitas pertanian, kerusakan tanaman, serta perubahan sifat fisika tanah. Penelitian ini bertujuan untuk menganalisis sifat fisika tanah berdasarkan tingkat kelerengan pada lahan hortikultura terdampak erupsi Gunung Marapi. Penelitian dilaksanakan di Nagari Batu Palano, Kecamatan Sungai Pua, Kabupaten Agam dengan menggunakan metode survei dan teknik *purposive sampling* berdasarkan kelas lereng, yaitu 0–8% (lahan sawi), 8–15% (lahan bawang), 15–25% (lahan kembang kol), dan lahan hutan (>45%) sebagai pembandingan. Parameter yang diamati meliputi tekstur tanah, bahan organik, berat volume, total ruang pori, dan permeabilitas. Hasil penelitian menunjukkan bahwa tekstur tanah didominasi fraksi pasir (47–65%) dengan berat volume sedang (0,85–1,11 g/cm³), total ruang pori 65–72%, permeabilitas cepat hingga sangat cepat (20–58 cm/jam), dan kandungan bahan organik rendah hingga sedang (1,59–4,60%). Berdasarkan analisis, penggunaan lahan memiliki pengaruh yang lebih besar terhadap sifat fisika tanah dibandingkan kelerengan. Lahan hortikultura yang diolah intensif mengalami penurunan bahan organik dan kestabilan agregat, sedangkan lahan hutan dengan tutupan vegetasi alami menunjukkan struktur tanah yang lebih baik dan stabil meskipun berada pada lereng curam. Hasil ini menunjukkan bahwa aktivitas pengelolaan lahan dan vegetasi lebih menentukan kondisi fisika tanah dibandingkan perbedaan kemiringan lereng.

Kata Kunci: *Sifat Fisika Tanah, Kelas Lereng, Hortikultura, Gunung Marapi*

ANALYSIS OF SOIL PHYSICAL PROPERTIES BASED ON SLOPE IN HORTICULTURAL LAND AFFECTED BY THE ERUPTION OF MOUNT MARAPI IN BATU PALANO VILLAGE, AGAM REGENCY

ABSTRACT

Horticultural land in Batu Palano Village, Agam Regency, is intensively cultivated across various slope classes, making it highly vulnerable to environmental disturbances. The eruption of Mount Marapi on December 23, 2023 deposited volcanic ash and sand of varying thickness across horticultural land in Batu Palano Village. It resulted in disruption of farming activities, crop damage, and alterations to soil physical properties. This study was aimed to analyze the physical properties of soil based on slope level in horticultural land affected by the eruption of Mount Marapi in Batu Palano Village, Sungai Pua District, Agam Regency. This research was conducted by using survey method. Soil sampling was taken purposively based on land slope (0–8% mustard greens land, 8–15% shallot land, 15–25% cauliflower land), and forest land (>45%) as a comparison. The observed parameters included soil texture, organic matter, bulk density, total soil pore, and permeability. The results showed that the soil was dominated by sand fractions (47–65%) with medium bulk density (0.85–1.11 g/cm³), and total soil porosity (65–72%), fast to very fast permeability (20–58 cm/h), and low to moderate organic matter content (1.59–4.60%). Based on the analysis, it was indicated that land use had a greater influence than slope level on soil physical properties. Intensively cultivated horticultural land had lower soil organic matter content than forest land use with natural vegetation even though on steep slopes. These findings indicated that land management practices and vegetation cover play more significant role in determining soil physical conditions than slope level.

Keywords: *Soil Physical Properties, Slope Class, Horticulture, Mount Marapi*