

**KAJIAN SIFAT FISIKA TANAH BERBAHAN INDUK PUMICE
PADA BEBERAPA KEMIRINGAN LAHAN DI KEBUN CAMPURAN
NAGARI SUNGAI DURIAN KECAMATAN PATAMUAN
KABUPATEN PADANG PARIAMAN**

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ABSTRAK

Penelitian mengenai kajian sifat fisika tanah berbahan induk pumice pada beberapa kemiringan lahan pada kebun campuran di Nagari Sungai Durian Kecamatan Patamuan Kabupaten Padang Pariaman dilaksanakan dari bulan April sampai Desember 2019. Penelitian ini bertujuan untuk mempelajari sifat fisika tanah berbahan induk pumice berdasarkan kemiringan lahan pada kebun campuran di Nagari Sungai Durian. Penelitian ini menggunakan metoda survey, dimana sampel tanah diambil berdasarkan “*stratified random sampling*”. Ada 5 kelas lereng pada kebun campuran ini, yaitu 0-8%, 8-15%, 15-25%, 25-45%, dan >45%. Parameter sifat fisika tanah yang dianalisis yaitu tekstur, bahan organik, BV, TRP, permeabilitas, stabilitas agregat, dan indeks plastisitas tanah. Hasil penelitian menunjukkan terjadi perbedaan sifat fisika berbahan induk pumice dari kelas lereng yang berbeda. Peningkatan kelas lereng dari 0-8% menjadi >45% menunjukkan nilai tekstur bervariasi (lempung, lempung berpasir, lempung liat berpasir, dan lempung berdebu), nilai BV berkriteria sedang ($0,66 \text{ g/cm}^3 - 1,06 \text{ g/cm}^3$), nilai TRP berkriteria sedang (74,83% – 60,07%). Kandungan bahan organik tanah juga berada dalam kriteria sedang baik pada kedalaman 0-20 cm (6,87 % - 5,14%) maupun 20-40 cm (5,39%-3,48%), kecuali pada lereng 25-45% yang berkriteria rendah (3,45% - 2,93%) dan pada lereng >45% memiliki kriteria sangat rendah (1,20% - 0,16%). Laju permeabilitas tanah bervariasi dari sedang, agak cepat, hingga cepat (4,84 cm/jam – 12,14 cm/jam), sedangkan indeks stabilitas agregat dari tidak mantap sampai mantap (25,84 – 70,78).

Kata kunci : Kelerengan, Patamuan, Pumice, Sifat fisika tanah

SOIL PHYSICAL ASSESSMENT IN PUMICE PARENTAL MATERIAL SOIL WITH SEVERAL SLOPES IN MIXED GARDEN SUNGAI DURIAN PATAMUAN PADANG PARIAMAN REGENCY

ABSTRACT

A research on soil physical properties assessment in pumice parent material with several slopes in the mixed garden in Sungai Durian, Patamuan subdistrict, Padang Pariaman Regency was carried out from April to December 2019. This study was aimed to analyzed the physical properties of soil derived from pumice parent material purposive sampling from several slopes in the mixed garden in Sungai Durian. This study used the survey method, where soil samples were taken by "purposive sampling". There were five slope classes in the mixed garden, namely 0-8%, 8-15%, 15-25%, 25-45%, and > 45%. The soil physical properties parameters that analyzed were soil texture, organic matter, BD, porosity, permeability, aggregate stability, and soil plasticity index. The results showed there was a difference in the physical properties of pumice parent material at several slopes. The increase of slope level from 0-8% to 45% showed varied soil textures (loam, sandy loam, sandy clay loam, and clay dust), the BD value was moderate criterion ($0,66 \text{ g/cm}^3 - 1,06 \text{ g/cm}^3$), the total porosity was moderate criterion (74,83% – 60,07%). Soil organic matter content was also within moderate criterion at 0-20 cm (6,87 % - 5,14%) and 20-40 cm depth (5,39%-3,48%), except that on the slope 25-45% which was categorized as a low criterion (3,45% - 2,93%) and on the slopes > 45% was categorized as a very low criterion (1,20% - 0,16%). The rate of soil permeability varied from moderate (4,84 cm/jam), rather fast (6,39 cm/hour), to fast (12,14 cm/hour), while the index of aggregate stability showed the unsteady to steady (25,84 – 70,78).

Keywords: Patamuan, Pumice, Soil physical properties, slope