PENENTUAN STABILITAS AGGREGAT TANAH PADA LAHAN TANAMAN SEMUSIM DI NAGARI KOTO LAWEH DAN PANDAI SIKEK KECAMATAN X KOTO KABUPATEN TANAH DATAR

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ABSTRAK

Stabilitas agregat tanah dapat dipengaruhi oleh beberapa faktor. Faktor yang mempengaruhinya berupa faktor internal seperti tektur tanah, bahan organik dan kapasitas tukar kation. Faktor pengolahan tanah yang intensif dapat mengganggu stabilitas agregat tanah. Salah satu lahan yang sering diolah intensif yaitu lahan tanaman semusim. Penelitian ini bertujuan untuk mengidentifikasi stabilitas agregat tanah dari penggunaan lahan budidaya tanaman semusim dari ordo Inceptisol. Pengambilan sampel dilakukan pada nagari Koto Laweh dan Pandai Sikek di lahan tanaman semsusim. Analisis dilakukan di Laboratorium Fisika tanah dan Kimia Tanah Fakultas Pertanian Universitas Andalas. Metode yang digunakan pada penelitian ini adalah metode survey. Sampel diambil pada lahan tanaman semusim dengan tiga kelas lereng yang berbeda (0-8%, 8-15%, 15-25%), dan hutan sekunder (8-15%) sebagai pembanding pada ketinggian 900 m dpl-1400 m dpl, serta kedalaman 0-20 cm dan analisis yaitu tektur tanah, C-organik, BV, TRP, permeabilitas, pH, KTK, rasio C/N, mineral tanah dan stabilitas agregat. Hasil analisis di laboratorium menunjukkan stabilitas agregat tanah berkriteria tidak stabil-kurang stabil (35.53-46.23), meskipun bahan organik tanah tinggi yaitu 5.13-9.55% tetapi berdasarkan hasil rasio C/N (8.80-29.27) tingkat pelapukan masih sangat rendah. Kapasitas tukar kation yang didapatkan juga tinggi (28.24-34.04) dikarenakan tingginya kandungan bahan organik. Untuk jenis mineral didominasi oleh crystobalite dan kuarsa yang memiliki pengaruh yang sedikit terhadap stabilitas agregat. Namun, adanya kandungan mineral hematit (oksida besi) yang mana diketahui dapat meningkatkan sementasi dan aggregat tanah.

Kata kunci : Koto Laweh, lahan tanaman semusim, Pandai Sikek, pengolahan tanah intensif, stabilitas agregat tanah

DETERMINATION AGGREGATE STABILITY UNDER SEASONAL CROP FARMING IN KOTO LAWEH AND PANDAI SIKEK, X KOTO DISTRIC, TANAH DATAR REGENCY

ABSTRACT

Soil aggregate stability can be affected by management given to a piece of land. A research on soil aggregate stability assessment was aimed to determenind the effect of annual crop cultivation at different levels of slope on aggregate stability. The research was conducted using survey method. Soil samples were taken from 0-20 cm soil depth at three different slopes (0- 8%, 8-15%, 15-25%) and also from secondary forest (8-15%) as a comparison in Koto Laweh and Pandai Sikek, with altitude 900 m asl-1400 m asl from February to July 2018. Laboratory analyses in Laboratory of soil physic and soil chemical, Department of Agriculture Andalas University. Parameters analysed were soil texture, SOM, BD, pore distrribution, permeability, CEC, pH, C/N ratio, mineral type and soil aggregate stability. Based on laboratory analyses, aggregate stability of Inceptisol at three sites was unstable 35.53-46.23, even though the soil had high SOM content 5.13-9.55%. the SOM (with C/N ratio = 8.80-29.27) was accumulated on soil surface due to low temperature. Soil texture was dominated by clay particles 36.33- 43.62%. The cation exchange capacity obtained is also high (28.24-34.04) due to the high content of organic matter. Minerals dominating the soil were crystobalite and quartz or silicaoxides having less effect on soil aggregate stability. However, some amount of iron-oxide (Fe-oxides) found could improve soil aggregate and cementation in the soil.

Keynote : aggregate stability, intensive cultivation, Koto Laweh, Pandai Sikek, seasonal crop farming

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