

KAJIAN LAJU INFILTRASI PADA BERBAGAI PENGGUNAAN LAHAN DI KALURAHAN WUKIRSARI, KAPANEWON IMOGIRI, KABUPATEN BANTUL

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ABSTRAK

Air hujan yang jatuh ke permukaan tanah sebagian akan meresap ke dalam tanah melalui proses infiltrasi dengan laju infiltrasi yang bervariasi sesuai dengan jenis penggunaan lahannya. Penelitian ini bertujuan untuk menganalisis laju infiltrasi dan beberapa sifat fisik tanah serta kandungan bahan organik di Kalurahan Wukirsari. Metode penelitian yang digunakan berupa metode survei. Pembuatan Peta Sistem Lahan diperoleh dari hasil *overlay* Peta Penggunaan Lahan, Kemiringan Lereng, dan Jenis Tanah, sehingga diperoleh 38 sistem lahan. Metode penentuan titik pengambilan sampel tanah ditentukan secara *purposive sampling* pada sistem lahan dengan mengeliminasi kemiringan lereng yang sangat curam sehingga dihasilkan 14 titik sampel. Penentuan laju infiltrasi menggunakan Metode Horton dan pengukuran di lapangan menggunakan alat *double ring infiltrometer*. Parameter yang digunakan yaitu laju infiltrasi, tekstur, struktur, porositas, berat jenis tanah (BJ), berat volume tanah (BV), bahan organik, dan kemiringan lereng. Hasil dari penelitian menunjukkan bahwa laju infiltrasi di lahan kebun dan sawah didominasi oleh kategori sangat cepat dengan rentang masing-masing 51,09–129,44 cm/jam dan 70,84–76,22 cm/jam. Lahan tegalan sebesar 6,37 cm/jam (agak cepat) - 125,37 cm/jam (sangat cepat), lahan permukiman sebesar 5,20 cm/jam (sedang) - 46,71 cm/jam (sangat cepat). Penelitian ini menghasilkan peta sebaran laju infiltrasi serta memberikan saran pada lahan tegalan yaitu melakukan penanaman tanaman penutup tanah (*cover crops*). Lahan kebun disarankan untuk memberikan bahan organik dan pembuatan rorak. Lahan sawah disarankan untuk mengembalikan sisa panen ke sawah sebagai tambahan bahan organik. Lahan permukiman disarankan untuk membuat lubang biopori.

Kata Kunci: Laju Infiltrasi, Metode Horton, Penggunaan Lahan, Sifat Fisik Tanah

STUDY OF INFILTRATION RATE ON DIFFERENT LAND USE TYPES IN WUKIRSARI VILLAGE, IMOGIRI DISTRICT, BANTUL REGENCY

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ABSTRACT

Rainfall reaching the ground surface partially infiltrates the soil, with infiltration rates varied according to land use types. This study aims to analyze the infiltration rate, several physical properties of the soil, and organic matter content in Wukirsari Village. A survey method was employed, where a Land System Map was generated by overlaying maps of land use, slope, and soil type, resulted in 38 land systems. Soil sampling points were determined using purposive sampling within these land systems, excluding very steep slopes, which yielded 14 sample points. The infiltration rate was determined using the Horton Method, with field measurements conducted using a double-ring infiltrometer. The parameters studied included infiltration rate, soil texture, structure, porosity, particle density, bulk density, organic matter, and slope. Results show that the infiltration rates in gardens and paddy fields are dominated by the very fast category, ranging from 51.09–129.44 cm/hour and 70.84–76.22 cm/hour, respectively. Dry fields range from 6.37 cm/hour (moderately fast) to 125.37 cm/hour (very fast), while residential areas range from 5.20 cm/hour (moderate) to 46.71 cm/hour (very fast). This research produced an infiltration rate distribution map and suggests interventions such as planting cover crops in dry fields. The garden is recommended to receive organic matter applications and the construction of silt pit. For paddy fields, returning crop residues to the field is recommended to increase organic matter content. For residential areas, the construction of biopore infiltration holes is recommended.

Keywords: Infiltration Rate, Horton Method, Land Use, Soil Physical Properties