

INTISARI

Tujuan penelitian ini: menentukan ketersediaan air bagi tanaman pada berbagai satuan lahan; melakukan pemetaan distribusi keruangan (*spatial distribution*) ketersediaan air bagi tanaman; menentukan faktor-faktor yang mempengaruhi ketersediaan air bagi tanaman pada berbagai satuan lahan di daerah aliran sungai (DAS) Serang bagian Hulu Kabupaten Kulon Progo, Propinsi Daerah Istimewa Yogyakarta.

Penelitian menggunakan metode survey, yaitu pengamatan, pengukuran, dan pencatatan secara sistematis terhadap fenomena di lapangan. Teknik sampling pengumpulan data menggunakan teknik *stratified purposive sampling* dengan pendekatan satuan lahan. Data primer adalah kedalaman tanah efektif, struktur tanah, dan kemiringan lereng. Data analisa laboratorium, meliputi: tekstur tanah, bahan organik, batas cair (BC), batas berubah warna (BBW), berat jenis, dan berat volume. Penentuan nilai ketersediaan air bagi tanaman (KABT) dilakukan dengan menghitung selisih kadar lengas tanah pada kapasitas lapangan (batas cair) dan kadar lengas tanah pada titik layu permanen (batas berubah warna).

Hasil penelitian menunjukkan: 1) di Daerah Aliran Sungai Serang bagian Hulu memiliki nilai ketersediaan air bagi tanaman yang bervariasi, 2) Nilai ketersediaan air bagi tanaman di Daerah Aliran Sungai Serang bagian Hulu terendah adalah 28,32 % volume (Pv), terdapat pada satuan lahan K1VKc. Nilai ketersediaan air bagi tanaman tertinggi adalah 203,69 % volume (Pv), termasuk klas amat sangat tinggi dan menempati satuan lahan D1IIIKc, 3) berdasarkan nilai ketersediaan air bagi tanaman, dihasilkan pemetaan ketersediaan air bagi tanaman di daerah aliran sungai (DAS) Serang bagian Hulu, terdapat dalam 5 kelas, meliputi: klas rendah, klas sedang, klas tinggi, klas sangat tinggi, dan klas amat sangat tinggi, dan 4) faktor-faktor yang paling dominan mempengaruhi ketersediaan air bagi tanaman di Daerah Aliran Sungai Serang bagian Hulu adalah tekstur tanah dan daya tahan tanaman terhadap kekeringan.



ABSTRACT

The aims of this research were to determine the water availability for crops of various land units; to map the spatial distribution of water availability for crops of various land units; to determine the factors of dominant to water availability for crops of the upper of Serang Watershed of Kulon Progo Regency, Special Region of Yogyakarta Province.

This research used the methods of the surveys i.e: observation, measurement, and recording sistematically toward the phenomena in the field. The sampling technique for data collection used stratified purposive sampling with land unit approach. The primary data were soil depth, soil structure, and slope. The data of the analysis of laboratory included: the soil texture, organic matter, liquid limit, color change limit, specific weight, and the bulk density. The determination of the value of water availability for crops was carried out by calculation the ratio between the soil moisture content in the field capacity (liquid limit) and the soil moisture content in the permanent wilting point (color change limit).

The result of research showed that: 1) the upper of Serang Watershed had various value of water availability for crops, 2) the lowest value of water availability for crops in the upper of Serang Watershed was 28,32 % in volume (Pv), located in the land unit of K1VKc. The highest value of water availability for crops was 203,69 % in volume (Pv), located in the land unit of D1IIIKc, 3) based on the value of water availability for crops, the water availability map for crops was produced comprised of 5 classes i.e: low class, medium class, high class, very high class, and very-very high class, 4) the dominant factors to water availability for crop in the upper of Serang watershed were the soil texture and the resistance of crops for dried.