

RINGKASAN

Penggunaan lahan merupakan segala kegiatan manusia terhadap lahan untuk memenuhi sebagian dari kebutuhan hidupnya dan mencerminkan sejauh mana usaha campur tangan manusia dalam memanfaatkan dan mengelola lingkungannya. Penggunaan lahan suatu wilayah terkait dengan pertumbuhan penduduk dan aktivitasnya dimana sering kali menyebabkan berubahnya lingkungan biofisik termasuk keadaan tanahnya seperti distribusi pori, stabilitas agregat, permeabilitas tanah dan kandungan bahan organik. Penelitian ini bertujuan untuk mengetahui 1) pengaruh perbedaan penggunaan lahan terhadap beberapa sifat fisik tanah di perbukitan Serayu Selatan. 2) penggunaan lahan yang menghasilkan sifat fisik tanah terbaik di perbukitan Serayu Selatan.

Penelitian dilaksanakan pada bulan Oktober 2018 di Perbukitan Serayu bagian Selatan Kabupaten Banyumas, Jawa Tengah dan analisis sampel dilakukan di Laboratorium Ilmu Tanah Universitas Jenderal Soedirman. Penelitian dilakukan dengan metode survei. Titik pengambilan sampel tanah dan pengamatan sifat lahan ditentukan dengan metode *purposive random sampling*, yaitu dengan memperhatikan tipe penggunaan lahan dan tingkat kemiringan lereng. Tipe penggunaan lahan yang diamati meliputi hutan pinus, hutan jati, perkebunan karet, kebun campur dan lahan agroforestri yang terdapat pada 3 (tiga) kelompok kemiringan lereng (0-8%; 8-15% dan >15%). Variabel yang diamati dalam penelitian yaitu berat jenis isi, berat jenis partikel, porositas, kadar air kapasitas lapang, *water-filled pore space* (WFPS) pada kapasitas lapang, batas cair, batas berubah warna dan persediaan air maksimum.

Hasil penelitian menunjukkan bahwa penggunaan lahan yang beragam mempengaruhi sifat fisik tanah. Perbedaan penggunaan lahan berpengaruh terhadap kadar air kapasitas lapang, air tersedia dan WFPS kapasitas lapang. Terdapat interaksi pengaruh antara penggunaan lahan dan kelerengan pada kadar air kapasitas lapang, air tersedia dan WFPS kapasitas lapang. Hasil penelitian juga menunjukkan bahwa penggunaan lahan agroforestri menghasilkan sifat fisik tanah terbaik.

SUMMARY

Land use is associated with all human activities on land to fulfill part of their needs. It also reflects the extent to which human intervention efforts utilize and manage their environment. The land use of an area is closely related to the population growth and activities which often lead to the change of biophysical environment including land conditions such as pore distribution, aggregate stability, soil permeability and content organic material. This research aimed to find out 1) the influence of land use on the soil physical properties in the southern Serayu hills. 2) the land use that produces the best soil physical properties in the Southern Serayu hills.

The Research was carried out in November 2018 in the hills of Southern part of Serayu hills, Banyumas, Central Java. Analysis of samples was carried out at the Soil Science Laboratory, Faculty of Agriculture, Jenderal Soedirman University. The Research was carried out using a survey method. Soil sampling and observations points were determined based on the purposive random sampling approach, by considering the type of land use and the slope steepness. Land use types observed comprised pine forest, teak forest, rubber plantations, orchards and land agroforestry on three (3) groups of slopes (0-8%; 8-15% and > 15%, respectively). The observed variables were soil bulk density, particle density, soil porosity, field capacity, water-filled pore space (WFPS) at field capacity, lapang, color alteration limit dan water holding capacity.

The results showed that the difference in land uses in the southern Serayu Hills influenced the soil physical characteristic. Land use differences affected some of the physical properties including the water content at the field capacity, soil water availability and the water-filled pore space at the field capacity. There was an interaction of influence between land use and the slope on the moisture content of the field capacity, water availability, and WFPS at the field capacity. The agroforestry system was found to be the best land use in providing soil physical properties in the southern Serayu Hills.