

Intisari

TINGKAT EROSI ALUR PADA BIDANG OLAH TERAS DI TEGALAN TANAMAN KETELA POHON SUB-DAS BOMPON, DAS BOGOWONTO

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Sebaran erosi alur dan kerapatannya dapat menggambarkan potensi penurunan kesuburan tanah karena hilangnya lapisan atas tanah yang kaya akan bahan organik dan unsur hara. Hilangnya bahan organik dan unsur hara tanah dapat menyebabkan penurunan produktivitas lahan. Penelitian sebaran erosi alur dilakukan di tegalan tanaman ketela pohon Sub DAS Bompon, DAS Bogowonto, Jawa Tengah yang atas kenampakan luarnya diduga mengalami permasalahan erosi. Tujuan penelitian yaitu: (1) mengidentifikasi persebaran erosi alur di tegalan tanaman ketela pohon; (2) mengetahui karakteristik tanah yang mempengaruhi pembentukan erosi alur; (3) mengetahui volume kehilangan tanah dan jumlah erosi alur.

Pengambilan data dilakukan dengan survey pada tegalan tanaman ketela pohon. Teknik pengumpulan data meliputi pengukuran lapangan dan uji laboratorium. Pengukuran lapangan meliputi mengumpulkan data curah hujan, mengamati dan memetakan sebaran erosi, menghitung volume erosi, mengukur sudut lereng, dan mengukur kedalaman solum. Uji laboratorium digunakan untuk mendeskripsikan karakteristik tanah yang meliputi: bahan organik, tekstur tanah, berat volume, berat jenis, porositas, sebaran pori, kemantapan agregat, dan permeabilitas tanah. Analisis data dilakukan secara kuantitatif dan kualitatif. Analisis kuantitatif menggunakan perhitungan matematis dalam menentukan jumlah volume tanah yang hilang. Analisis kualitatif digunakan untuk menghubungkan setiap faktor yang berpengaruh terhadap hasil proses erosi alur yang berkembang di tegalan tanaman ketela pohon.

Hasil penelitian berupa peta sebaran erosi alur di tegalan tanaman ketela pohon Sub DAS Bompon. Luas wilayah penelitian adalah ± 4 ha dengan volume erosi dan jumlah erosi paling banyak di zona erosi. Pada zona erosi terbentuk 363 erosi dengan volume $3,3236 \text{ m}^3/4$ bulan hujan sedangkan pada zona deposisi terbentuk 50 erosi dengan volume $0,2254 \text{ m}^3/4$ bulan hujan. Hasil penelitian menunjukkan bahwa erosi alur cenderung berkembang di zona erosi. Hasil pengukuran hubungan korelasi menunjukkan bahwa berat volume tanah pada zona erosi mempengaruhi kehilangan volume tanah sebesar 22,67% dan permeabilitas sebesar 90,9% pada zona deposisi.

Kata Kunci: sebaran, erosi, alur, bentuklahan, aktivitas manusia

Abstract

RIIL EROSION LEVEL IN TERRACE LAND ON DRY LAND PLANTED WITH CASSAVA AT THE BOMPON SUB-WATERSHED, BOGOWONTO WATERSHED

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Distributed rill erosion and its density can indicate the potential declined of soil fertility due to loss of topsoil that is a lot of in organic matters and nutrients. Loss of organic matter and soil nutrients can lead to the decreasing of land productivity. The research is done at the dry land planted with cassava of the Bompon Sub watershed, Central Java, whose appearance was suspected of having erosion problems. The research objectives are: (1) identifying the distributed rill erosion in dry land planted with cassava; (2) determining the soil characteristics that affect the rill erosion formation; (3) determining the soil loss volume and the numbers of rill erosion.

Data was collected by surveying the dry land that is planted with cassava. The methods of data collection included field measurements and laboratory analysis. Field measurements included rainfall data, observing and mapping rill erosion distribution, rill erosion volume, land slope and the depth of soil solum. Laboratory analysis were used to describe soil characteristics which include: organic matter, soil texture, bulk density, partical density, porosity, pore distribution, aggregate stability, and soil permeability. Quantitative analysis was used mathematical approach to determine the amount of soil lost. Qualitative analysis was used to correlate each factors that influence the results of the erosion process flow that develops in cassava fields.

The result of this research is in the form of a rill erosion distribution map in cassava fields of the Bompon Sub-watershed. The area of the research is ± 4 ha with the largest volume and number of erosion in the erosion zone. There were 363 erosions formed with a volume of $3.3236 \text{ m}^3/4$ rainy months in the erosion zone while 50 erosions formed with a volume of $0.2254 \text{ m}^3/4$ rainy months in the deposition zone. The correlation analysis indicated that bulk density in the erosion zone affects the soil loss volume by 22,67% and permeability in the deposition zone affects the soil loss volume by 90,9%.

Keywords: distribution, erosion, rill, landform, human activity



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