PENDUGAAN EROSI MENGGUNAKAN METODE PLOT KECIL PADA KAWASAN WISATA KEBUN TEH DESA KEMUNING KECAMATAN NGARGOYOSO KABUPATEN KARANGANYAR

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INTISARI

Perubahan penggunaan lahan Kebun Teh Kemuning menjadi kawasan wisata Kemuning Sky Hills diduga memiliki dampak negatif dengan menurunnya tutupan vegetasi dan kualitas tanah yang dapat meningkatkan laju aliran permukaan dan erosi. Sehingga diperlukan pengukuran nilai aliran permukaan dan erosi pada Kebun Teh Kemuning. Penelitian ini juga bertujuan untuk melihat hubungan tebal hujan dengan aliran permukaan dan erosi serta rancangan teknik konservasi tanah dan air supaya pengembangan wisata berjalan secara berkelanjutan.

Pengukuran erosi dan aliran permukaan dilakukan dengan menggunakan plot kecil berukuran 22 m x 4 m yang ditempatkan pada kebun teh dan kawasan wisata. Plot penelitian ditentukan menggunakan *purposive sampling* dengan dua ulangan berupa atas dan bawah. Pengukuran hujan dilakukan dengan ombrometer yang diukur setiap kejadian hujan. Selanjutnya dilakukan uji regresi untuk melihat hubungan tebal hujan terhadap aliran permukaan dan erosi.

Berdasarkan pengukuran yang dilakukan, diperoleh nilai erosi pada plot kebun teh kontrol (21,67 ton/ha/tahun dan 15,89 ton/ha/tahun dan nilai erosi pada plot kebun teh wisata (10,27 ton/ha/tahun dan 17,12 ton/ha/tahun). Sementara nilai aliran permukaan pada plot kebun teh kontrol (53,01 mm dan 43,70 mm) lebih rendah dibandingkan nilai aliran permukaan pada plot kebun teh wisata (65,87 mm dan 54,30 mm). Pengaruh tebal hujan terhadap aliran permukaan dan erosi menunjukkan nilai R^2 berturut-turut sebesar 0,9628; 0,9712; 0,9694; dan 0,9605 serta 0,9705; 0,9727; 0,9766; dan 0,9663. Berdasarkan hasil tingkat bahaya erosi ringan, teknik konservasi tanah dan air yang tepat adalah dengan menanam pohon dan legum di sela-sela tanaman teh.

Kata Kunci: Kebun Teh Kemuning, Kemuning Sky Hills, Sedimentasi, Aliran Permukaan, Tebal Hujan

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ESTIMATION OF EROSION USING SMALL PLOT METHOD IN TEA PLANTATION TOURISM AREA IN KEMUNING VILLAGE, NGARGOYOSO SUB-DISTRICT, KARANGANYAR REGENCY

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ABSTRACT

The conversion of land use from the Kemuning Tea Plantation to the Kemuning Sky Hills tourism area is suspected to have negative impacts, such as reduced vegetation cover and declining soil quality, which may increase the rate of surface runoff and erosion. Therefore, it is necessary to measure the values of surface runoff and erosion in the Kemuning Tea Plantation. This study also aims to examine the relationship between rainfall depth and both surface runoff and erosion, as well as to design appropriate soil and water conservation techniques to support sustainable tourism development.

Measurements of erosion and surface runoff were conducted using small plots measuring 22 m × 4 m, which were placed in both tea plantation and tourism areas. The research plots were selected using purposive sampling with two replications: upper and lower slope positions. Rainfall measurements were carried out using an ombrometer and recorded during each rainfall event. Regression analysis was then performed to observe the relationship between rainfall depth and both surface runoff and erosion.

Based on the measurements, erosion values on the control tea plantation plots (21.67 tons/ha/year and 15.89 tons/ha/year) and the tourism tea plantation plots (10.27 tons/ha/year and 17.12 tons/ha/year). Meanwhile, surface runoff values on the control plots (53.01 mm and 43.70 mm) were lower than those on the tourism plots (65.87 mm and 54.30 mm). The influence of rainfall depth on surface runoff and erosion showed R^2 values of 0.9628; 0.9712; 0.9694; and 0.9605 for surface runoff, and 0.9705; 0.9727; 0.9766; and 0.9663 for erosion, respectively. Based on the results, the erosion hazard level is classified as low. Therefore, an appropriate soil and water conservation technique is the intercropping of trees and legumes between tea plants.

Keywords: *Kebun Teh Kemuning*, *Kemuning Sky Hills*, *Sedimentation*, *Run Off*, *Rainfall*

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