

Sub-DAS Kalibuthek merupakan daerah yang memiliki potensi degradasi tanah cukup tinggi. Degradasi tanah kurang banyak disadari karena kurangnya informasi mengenai kualitas tanah. Kualitas tanah perlu diketahui untuk mengetahui kondisi tanah akibat penggunaan lahan yang berbeda. Pengumpulan data lapangan dan pengambilan sampel tanah untuk analisis laboratorium dilakukan dengan metode transek memotong garis kontur secara melintang dan membujur. Pemilihan titik sampel dilakukan dengan mempertimbangkan keragaman penggunaan lahan. Kualitas tanah ditetapkan dengan *Soil Quailty Index* berdasarkan metode total dataset dengan *non-linear scoring*. Analisis data dilakukan dengan uji LSD dengan taraf signifikansi sebesar 5%. Hasil menunjukkan bahwa penggunaan lahan tegalan, kebun campur, dan sawah berpengaruh terhadap kualitas dan sifat-sifat tanah seperti berat volume, indeks kemantapan agregat, daya hantar listrik, C-organik, N-tersedia, P-tersedia, K-tersedia, dan *microbial biomass nitrogen*. Nilai indeks kualitas tanah pada lahan sawah sebesar 0,55 dan kebun campur sebesar 0,54 lebih baik dan berbeda nyata dengan indeks kualitas tanah di lahan tegalan sebesar 0,50. Hasil uji korelasi menunjukkan bahwa faktor yang paling berpengaruh terhadap indeks kualitas tanah di lokasi penelitian adalah indeks kemantapan agregat.

Kata kunci: kualitas tanah, penggunaan lahan, total dataset, *non-linear scoring*.

Sub-watershed of Kalibuthek is an area with high potential for soil degradation. Soil degradation is less widely realized due to lack of information about soil quality. Soil quality needs to be known to find out the soil conditions due to different land uses. Field observations and soil sampling for laboratory analysis were carried out using transect method by passing through the contour lines. The selection of sample points were done by considering the variation of land uses. Soil quality is determined by using Soil Quality Index based on total dataset method with non-linear scoring. Data analysis was performed by the LSD test at significant level of 5%. The results showed that moor, mixed garden, and rice field land uses affected soil quality and soil properties such as bulk density, aggregate stability index, electrical conductivity, organic carbon, available nitrogen, available phosphor, available potassium, and microbial biomass nitrogen. The value of soil quality index in rice fields (0.55) and mixed plantations (0.54) are better and significantly different than the quality of soil in the dry lands (0.50). The results of the research prove that the most influential factor on the soil quality index at the study location is the aggregate stability index.

Keywords: soil quality, land use, total dataset, *non-linear scoring*