Potential Of Vetiver Grass and Kim Chiam As Slope Stabilizer at Different Elevation In Good Agricultural Practices (MyGap) Area

ABSTRACT

The fast tempo of agriculture development and land use changes has resulted in a rapid depletion of most of the suitable land for agriculture in the country. This has caused the opening of new unsustainable agriculture area in sloping land especially the steep land and has sparked serious soil erosion phenomena. The Malaysia Good Agricultural Practice (myGAP) certification program which emphasizes the environment, economy and social aspects for agricultural produce has become one of the tools to guide farmers in cPotential ontrolling soil erosion. This study looked at the comparison of vetiver grass (T1) and daylily (T2) as slope stabilizers against bare soil at different elevations using the Revised Universal Soil Loss Equation (RUSLE). A unit plot of 22.1m long and 4.5m wide was built on the 9% sloping area in Cameron Highlands, Pahang (L1) and Titi Gantong, Perak (L2), respectively. Data from rainfall stations were used to define rain erosivity (R) while land cover (C); inclusive of the measurement of height, canopy and root was obtained using hemispherical photography. Length of slope (LS) was constant and conservation measures (P) were based on structures and land use types. To obtain the erodibility factor (K), soil samples were analyzed. The dry soil weight was measured to determine the eroded soil (A). Results showed that L1 had the highest R (13260.3 MJ/mm/ha/hour/year). C of T1 (L1&L2) gave the broadest coverage compared to T2 (L1) and T2 (L2) with higher average measurement of height, canopy and root, while P (L1&L2) was 0.1 (T1) and 0.4 (T2). However, T2 was outstanding at L1 than L2. Despite the K value of L1 (0.02 ton/hour/MJ/mm) being higher, L2 showed higher erosion. Thus, it is concluded that vetiver grass can be a myGAP recommendation as an easy and low-cost slope stabilizer at different elevation whilst daylily is best to be recommended for the highlands.