World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:13, No:01, 2019

Use of Vegetative Coverage for Slope Stability in the Brazilian Midwest: Case Study

Authors : Weber A. R. Souza, Andre A. N. Dantas, Marcio A. Medeiros, Rafaella F. Costa

Abstract : The erosive processes are natural phenomena that cause changes in the soil continuously due to the actions of natural erosive agents and their speed can be intensified or retarded by factors such as climate, inclination, type of matrix rock, vegetation and anthropic activities, the latter being very relevant in occupied areas without planning and urban infrastructure. Inadequate housing sites associated with an inefficient urban drainage network and lack of vegetation cover potentiate the erosive processes that, over time, are gaining alarming proportions, as is the case of the erosion in Planaltina in Federal district, a Brazilian state in the central west. Thus, the aim of this work was to compare the use of Vetiver grass and Alfalfa as vegetation cover to slope protection. For that, a study was carried out in the scientific literature about the improvement of the soil properties provided by them and verification of the safety factor through the simulation of slopes with different heights and inclination using SLOPE / W software. The Vetiver grass presented little more satisfactory results than the Alfalfa, but these obtained results slightly closer to that of the vetiver grass in less time of planting.

Keywords : erosive processes, planting, slope protection, vegetation cover
Conference Title : ICEGSA 2019 : International Conference on Environmental Geotechnology and Sustainable Applications
Conference Location : New York, United States
Conference Dates : January 30-31, 2019