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Effect of Use of Geocell and Rice Straw in Slope Stability

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Abstract: *One of the most difficult challenges in geotechnical engineering is slope failure caused by soil erosion during rain. The geocell structures and rice straw reinforcement are used to create a composite soil treatment and slope protection approach. The geocell structures improve the planting soil's stability and provide a stable and fixed habitat for the vegetation, while the rice straw strengthens the soil while also increasing its fertility. The progression of slope failure during rainfall, soil erosion and slope displacement were all evaluated. The findings reveal that when rainfall persists, slope failure occurs, and soil deterioration increases with rainfall intensity. Although geocell treatment enhances slope stability, geocell with rice straw composite reinforcement provides the best erosion control and slope protection. The result shows that use of geocell improve slope stability , but geocell and rice straw composite shows best erosion control and slope stability.*

Keywords: Geocell, rice straw, slope Displacement, Slope erosion

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