

ชื่อเรื่อง

Erosion/Sediment Control Effectiveness of Vetiver at U.S. Army Lands

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Abstract

Based upon encouraging results at Fort Polk, the U.S. Army Construction Engineering Research Laboratories have developed a comprehensive research program for evaluating the ecology and biology of vetiver grass. Demonstration pilot projects have been set up at thirteen Army installations to determine the erosion/sediment control effectiveness of vetiver and its geographic range for survivability under different climatic conditions. Initial results from these research/evaluation sites, that are mostly located in the midwestern and south-eastern parts of the United States, are discussed in this study. Two types of vetiver cultivars, an Indian genotype and a "Ft. Polk" variety were included for testing and evaluation. Because of serious concerns by Army environmental managers, further research on the Indian cultivar has been discontinued because it produces viable seeds, thereby having the potential to become an exotic weed on Army lands.

Preliminary growth characteristics and erosion control data indicate that closely planted vetiver transplants form robust hedge during the first planting year. Acting like a "bioterrace", the hedge effectively controls erosion on sloping terrains and acts as a check dam by filtering moving sediment in ephemeral streams and gullies. Vetiver response to burning, herbicides, competition with native plant species, vehicular traffic, and its growth characteristics under various climatic conditions are also discussed. Additionally, data on the number of observed chromosomes in Indian and "Fort Polk" cultivars is presented and future research needs are discussed in the paper.