Stabilizing Earthen Channels Using Organic Amendments: Cost Benefit Analysis. (S06-carpenter164046-Poster)

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Abstract:

Managing over 4500 km of drainage waterways in the Houston, Texas area, the Harris County Flood Control District has difficulty maintaining channels due to poor vegetation establishment and accelerated erosion. Often, the District must vegetate waterways where soils are essentially bereft of organic matter and macronutrients, and are either dispersive or highly erodible. The goal of this study was to determine the value of organic soil amendments for controlling erosion and establishing and sustaining vegetation in a cost effective manner. Six organic amendments were added to the soil. N, P, and K were added to meet soil test recommendations for common bermudagrass establishment. Effects of organic amendments on soil stability were determined by examining effects of soil concentrations of macro- and micro-nutrients, bulk density, and plant tissue concentrations of selected nutrients on vegetative cover and biomass. Costs of treatments and maintenance of the plots were extrapolated to costs per ha. and compared to the cost per ha. for maintaining the surrounding channel. Relative sustainability of the vegetative cover was compared with the control. Results of the laboratory analyses, field data, and cost analysis will be discussed.

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