Forage Species' Persistance on a Reclaimed Mine Soil Treated with Biosolids. (C06-abaye100350-Oral)

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Abstract:

The establishment and maintenance of persistent vegetation to support post-mining land use on mined lands is an important part of the reclamation process. A field study was established in the summer of 1990 on a reclaimed mine site in southwest Virginia to determine forage species' adaptability and survival. The soil was comprised of sandstone and siltstone overburden materials. A composted mixture of sewage sludge and wood chips was applied prior to revegetation at a rate of 112 Mg dry matter ha-1. Sixteen treatments were established, each in four replications, using 12 forage species in pure stands and mixtures. Plant samples were collected annually in the fall, 1996 - 2001, to determine botanical composition and biomass production. Samples were separated by target species (species originally planted), and non-target grasses, forbs, and legumes. Tall fescue (F. arundinacea), sericea lespedeza (L. cuneata), switchgrass (P. virgatum), and switchgrass/AULotan (Lespedeza sp.) mix were the most successfully established. The treatments containing alfalfa (M. sativa), ladino clover (T. repens), and birdsfoot trefoil (L. corniculatus) consistently had poor biomass accumulation.

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