EVALUATION OF SPECIES FOR RAPID ESTABLISHMENT ON MISSISSIPPI ROADSIDES[1]

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Abstract-Non-point source pollution caused by erosion from road construction poses hazardous environmental effects. Percolation and infiltration of nutrients into groundwater can be detrimental to the surrounding environment. In addition, the annual roadside maintenance budget for mowing exceeds $10 million in Mississippi. The current standard for roadside cover is 70% cover at 30 days after planting. Our objective was to evaluate rapidly established short-statured species in an effort to prevent erosion, combat non-point source pollution, and reduce mowing cost. Factors evaluated were rate of establishment, plant cover, and mowing requirement. The experimental site was located on the southwest side of Starkville, MS along MS Highway 25. A total of four replications of eighty-five (85) different treatments were planted. Each plot with the exception of sod treatments, were seeded with a mix of seeds of three species. Species evaluated were: Oilseed radish (*Raphanus sativus*), bermudagrass (*Cynodon dactylon*), bahiagrass (*Paspalum notatum*), centipedegrass (*Eremochloa ophiuroides*), zoysiagrass (*Zoysia japonica*), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), Texas bluegrass (*Poa arachnifera*), tall fescue (*Festuca arundinacea*), creeping red fescue (*Festuca rubra),* and annual ryegrass (*Lolium multiflorum*). In addition Pennington's Slopemaster Seed mix and the MDOT standard seed mix were also evaluated. Plot size was 1.82 x 3.04 m (6x10 ft). Each plot received the standard MDOT fertilizer rate of 1,136 kg ha^{-1} (1,000 lbs/ac) of 13-13-13. Plant cover and rate of establishment were evaluated visually and using electronic images using Sigmascan. Visual and image analysis showed radish plants established the quickest and provided the most cover. Pennington's Slopemaster® product, mixes that contained bermudagrass, bahiagrass, and all sod treatments provided sufficient cover within 30 days.

Additional Key Words: sod, image analysis.

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