

## RESEARCH SUMMARY

### Identification of Low Growing, Salt Tolerant Turfgrass Species Suitable for Use along Highway Right of Way – Field Trials

#### WHAT WAS THE NEED?

Highway shoulders in Maryland are typically seeded with a mixture of tall fescue and Kentucky bluegrass, which establishes quickly, grows vigorously, and is resilient to stresses encountered along roadsides, such as drought and salt spray. Due to vigorous growth of roadside vegetation, however, roadsides need be mowed often to preserve safety and sight distance for highway users. In addition to its high cost, mowing exposes workers to traffic and other hazards, and may be harmful to desirable vegetation. This study explored the efficacy of using alternative low growing grass species that may reduce maintenance costs, yet still provide economic and ecological benefits such as fast establishment, erosion control, and resilience.

#### WHAT WAS THE GOAL?

The objective was to identify grass species that require little maintenance yet perform well across the varied climates of Maryland. The project compared ten alternative species and species mixes to the tall fescue seed mix used by the Maryland Department of Transportation State Highway Administration (MDOT SHA).



Experimental trial set up in Easton, MD

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## WHAT DID THE RESEARCH TEAM DO?

One roadside trial was established in each of the three distinct climatic regions of Maryland: western MD, central MD, and the eastern shore. Each trial was composed of the same 12 treatments, including an unplanted control, the MDOT SHA turfgrass seed mix, several tall and fine fescue treatments, and native grass species treatments. Each treatment was replicated three times within each trial using 10x10 ft plots that were arranged in a linear transect along the roadside. Plots were monitored from May 2017 to October 2019. At site visits, cover of grass, forbs, and bare ground were estimated, vegetation height measured, and photos of each plot taken. Biomass was harvested, dried, and weighed when plants reached a mowable height.

## WHAT WAS THE OUTCOME?

Fescue treatments established dominance and were competitive against weeds only in western MD. Tall fescue established better and was more resilient to roadside disturbances than hard fescue. A mix of 20% tall fescue and 80% fine fescues established just as well as the MDOT SHA turfgrass seed mix at one-third the seeding rate. Upland bentgrass (*Agrostis perennans*) contributed to cover and biomass of plots in western MD although it established slowly and was sensitive to salt grit. In central MD, side oats grama (*Bouteloua curtipendula*) established quickly and produced consistent high coverage that was similar to the best performing tall fescue cultivars Mustang 4

and Titanium 2LS. Plots were minimally invaded by weeds throughout the summer months. Purple lovegrass (*Eragrostis spectabilis*) also established well in central MD but because the vegetative growth habit of the species is inconspicuous, its excellent establishment was only evident when it produced its conspicuous inflorescences. No fescues or native grass species performed well on the eastern shore and grass weeds soon dominated the site.

## HOW WILL MDOT SHA USE THE RESULTS?

The results of side-oats grama are particularly promising. MDOT SHA will consider additional research that could include experimenting with seeding rates, timing of seeding, mowing regime, genetic sources, and seed mixes.



Side-oats grama at central MD site

## LEARN MORE

To view the complete report, click [here](#).

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