

REPORT ON TURF GRASSES AND LEGUMES AND TURF ESTABLISHMENT

Summary of Observations on Shoulder Stabilization
Baldwin County, Alabama

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THE CONSTRUCTION of a highway along Gulf Shores in South Alabama posed a serious problem of shoulder and slope stabilization due to the sterility of the soil, the action of salt spray and drifting sand. J. F. Tribble of the Alabama State Highway Department contacted us about this problem early in 1949. Common Bermuda was to be used on the immediate shoulders since the construction of the road base with imported soil material provided soil in which it could grow. The slopes and back slopes of pure sand were the areas of the problem. Nothing definite was known about what could be grown on this site.

An observational project was outlined to try several grasses and legumes. The slopes were heavily fertilized with basic slag, complete fertilizer, and sprigged or seeded. Each grass seeding was overlapped by a legume seeding. The seedings consisted of Pensacola Bahiagrass, rescuegrass, coastal Bermuda grass, Pensacola carpet grass, and weeping lovegrass. Hairy indigo, partridge peas, and blanket indigo were used as companion legume crops. They were sown in accordance with a pre-arranged schedule. The coastal Bermuda grass and the Pensacola carpetgrass were sprigged. At the extreme edge of the back slopes a continuous single row of native grasses were sprigged. It was hoped that these grasses would act as a windbreaker to stop the blown sand. Beach bluestem, sea oats, and Panicum amarulum were used. In addition, centipede and torpedo grass were tried. The Pensacola Bahiagrass and the rescuegrass were sown as companion crops. Some germination or growth resulted from all of these plantings.

Since the second year the Pensacola Bahiagrass has persisted and made relatively greater growth and provided more stabilization than anything else. The rescuegrass made the fastest growth, but lasted only the first year. It served as a nurse crop while the Pensacola Bahia was being established. Both the common Bermuda along the immediate edge of the pavement and the coastal Bermuda in the sand beyond have lived and grown but have shown throughout their history a lack of fertilizer even with the high rates applied. The partridge peas did best of all the legumes planted, but failed to seed due to a disease which attacked them late in the summer of the first season. Hairy indigo and blanket indigo were disappointing in the lack of stand; there is even less of this material in the second year. The Pensacola carpetgrass persists, but is not sufficiently aggressive. Weeping lovegrass has grown well but we did not secure a good stand. The native grasses which were sprigged in along the edge of the plantings have been disappointing in their performance. All of them have persisted, but none, even with treatment, have given adequate growth to provide the protection desired.

Pensacola Bahiagrass was discovered in Pensacola, Florida, growing in practically pure beach sand in the early 1930's. It has become a rather important agricultural grass for light sandy soils and appears to withstand the ocean spray and grow. It has promise of becoming important in such locations.

Pensacola Bahiagrass is a perennial summer grass. It is able to endure very

low fertility levels but responds rapidly to good treatment. It has long narrow leaves. It spreads slowly by runners on the surface of the ground and has a deep and extensive fibrous root system. It is highly drought-resistant and forms a sod. The seed stems average 24 in. It has endured temperatures as low as 0 deg. Fahrenheit. It produces a large crop of good seed. It is a grass very slow to develop from seed, generally requiring a year to establish a sod. It must be established with a nurse crop for maximum stabilization against erosion. /AUTHOR/

Plantings throughout the year have been successful. Fall and early spring are the generally recommended dates. It should be sown at 10 to 15 lb. per acre on agricultural lands and at double the rate on severe sites. A good seed bed with plenty of phosphate and potash should be made. Nitrogen should be used after establishment has begun. It will grow with companion crops such as common lespedeza, white clover, crimson clover, reseeded vetches (Augusta, large flowered, smooth, pidgeon, etc.) or with other grasses, as for example, rescue, fescue and even Bermuda.

Seed is available in limited quantities on the market in Florida, Alabama, Georgia, and Mississippi at prices approximating \$0.70 per lb., but will become more plentiful as time passes.

TABLE A. SEEDING AND FERTILIZING SCHEDULE FOR S.C.S. OBSERVATIONAL PLANTING PROJECT S366.

TIME SCHEDULE	Length of Plots to be Seeded (Based on 2 Sq. Yds. Per Lin. Ft. of Road) ^Δ					
	67 Stations	13 Sta.	11 Sta.	80 Stations	15 Sta.	24 Sta.
Oct.	Cultivate all Strips To Be Planted and Incorporate Basic Slag @ 800# / Acre					
	① Incorporate 4-10-7 Fert. @ 800# / Acre				Inc. 4-10-7	
	② Transplant two or more rows of native beach grasses along cultivated areas and beyond limit of strips to be sowed				@ 800# / Acre	
Late Nov.	③ Sow rescuegrass @ 30# / Acre				Sprigs on 12"	
	Sow Pensacola Bahiagrass @ 30# / Acre				Coastal # 35 Bermuda	Pensacola Carpet-Grass
Feb.	Broadcast nitrate of soda @ 200# / Acre					
	① Disc into seedbed 4-10-7 Fert. @ 800# / AC		①			
March	② Sow showy partridgepeas @ 30# / Acre		②			
	① Broadcast 0-12-20 Fert. @ 600# / Acre					Disc in 0-12-20 a 600# / Acre
May thru August	② Sow blanket indigo @ 10# / Acre					Sow late hairy indigo @ 10# / Ac.
	③ Sow weeping lovegrass @ one pound per Acre 400# / ac. Nitrate of soda @ 100# Monthly					
Note: ^Δ The lengths of plots given assumes a strip 9 ft. wide to be sowed on each side of the road adjacent to the existing 4 ft. strips of Bermuda grass. If the average width of any plot varies from this adjust the length of that plot accordingly.						