

Natural Resources  
Conservation Service

Jimmy Carter  
Plant Materials Center  
Americus, GA

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Plant Materials Technical Note No. 27

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# Evaluation of Little Bluestem Selections for Conservation in the Georgia Coastal Plain



*Helping People Help the Land*

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# Acknowledgements

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Purpose: The purpose of this technical note is to provide State specialists and NRCS field offices in Georgia with information on the adaptation performance of 'Coastal Plains Germplasm', 'Pinehill bluestem accession 9095064', 'Aldous' and "OK Select Germplasm" Little Bluestem at the Jimmy Carter Plant Materials Center, Americus, GA.

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**Overview:**

Little Bluestem [*Schizachyrium scoparium* (Michx.) Nash] is a tufted warm season, perennial, grass occurring broadly throughout the U.S. and Canada (Tober and Jensen, 2013). Recognizing the many conservation benefits of Little Bluestem, USDA-Natural Resources Conservation Service (NRCS) plant materials program and other state and federal agencies have evaluated and released several improved cultivars and pre-varietal germplasm selections for commercial production for forage, wildlife habitat, revegetation of disturbed lands, and critical area seedings.

Little Bluestem is recommended by the USDA- NRCS in Georgia for inclusion in the following conservation practices:

- 327 – Conservation Cover
- 342 – Critical Area Planting
- 647 – Early Successional Habitat
- 386 – Field Border
- 512 – Forage and Biomass Planting
- 422 – Hedgerow Planting
- 381 -- Silvopasture
- 645 – Upland Wildlife Habitat Management

**Purpose:**

The purpose of this Technical Note is to transfer the results of an adaptation trial of ‘Coastal Plains Germplasm’, ‘Pinehill bluestem accession 9095064’, ‘Aldous’ and “OK Select Germplasm’ Little Bluestem conducted at the USDA-NRCS Jimmy Carter Plant Materials Center, Americus, GA. The inclusion of ‘Coastal Plains Germplasm’ marks the first evaluation of this 2016 release from the East Texas PMC in the Southern Coastal Plain, MLRA 133A.

**Procedure:**

A 20-ft row, at 1-foot intervals, of each Little Bluestem entry was transplanted to the field in June 2017 on Red Bay Sandy Loam soil at the Jimmy Carter Plant Materials Center, Americus, GA (Table 1). Irrigation water was applied weekly for the first 6 weeks after planting to accelerate establishment. No additional irrigation water was applied during the 3-year evaluation. Weeds were controlled mechanically by hand hoeing and cultivation. Fertilizer was not applied during the year of establishment. A complete, high-grade, fertilizer with analysis of 10-10-10 was applied at a rate of 300 pound per acre after spring green up in the second and third year of the evaluation. Dormant plant residue was burned mid to late winter each year.

Plots were evaluated twice per year in 2018-2020, once in the spring for stand survival following winter dormancy and early vigor (plant health) and again in late summer for stand survival, vigor, environmental stress (insect, disease, drought), bloom, and plant height. Stand survival % was evaluated as number of living plants divided by number of plants at establishment. Plant height was taken from in-field measurements spring and fall. Vigor, disease and insect resistance ratings were by visual assessment.

Table 1. Collection origin and releasing Agency of Little Bluestem cultivars and germplasm.

<b>Cultivar/ Germplasm</b>	<b>Collection Origin</b>	<b>Releasing Agency</b>
Aldous	Kansas	Kansas Agricultural Experiment Station and Agricultural Research Service
Coastal Plains Germplasm	East Texas and Louisiana	USDA NRCS East Texas and Golden Meadow, Louisiana, Plant Materials Centers
OK Select Germplasm	Southwestern Oklahoma	USDA-NRCS James E."Bud" Smith Plant Materials Center, Texas
Pinehill Bluestem Accession 9095064	Boykin Springs and Sabine National Forest, Texas	USDA-NRCS East Texas Plant Materials Center

### Findings:

None of the Little Bluestem selections exhibited disease or insect issues. All maintained an acceptable stand above 70 % throughout the evaluation period. The two selections originating from Texas, Coastal Plains Germplasm and Pinehill Accession 9095064 displayed greater vigor and plant height than Aldous and OK Select Germplasm. The vigor rating may have more significance when establishing little bluestems in mixtures with other native warm season grasses.

### NRCS Application:

Little Bluestem is a native warm season grass that can be established in monoculture or as part of mixtures to address a variety of resource concerns. All lines in this trial can be recommended for planting on the Southern Coastal Plain, MLRA 133A and 137. For additional information on establishment and management, consult the [USDA Plants Database Little Bluestem Plant Guide](#).



Fig. 1. (Left to Right) Coastal Plains Germplasm, Pinehill accession 9095064, Aldous, and OK Select Germplasm

Table 2. Percent stand, plant height, and vigor of Little Bluestem sources in 2018-2020, USDA, NRCS Jimmy Carter Plant Materials Center, Americus, GA.

Cultivar/ Germplasm	Evaluation Parameters								
	% Stand			Plant Height <sup>a</sup>			Vigor <sup>b</sup>		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
	----- % -----			-----inch-----					
Aldous	90	86	86	54	46	40	5	5	5
Coastal Plains	90	90	90	64	58	63	3	1	1
OK Select	76	71	71	48	44	36	5	7	7
Pinehill 9095064	86	81	81	60	55	60	3	3	3

<sup>a</sup> Plant height is defined as the absolute height of the plant.

<sup>b</sup> Vigor is defined as the health of the plant and visually rated on a scale of 1 to 10 where 1 = excellent; 3 = good; 5 = fair; 7 = poor.

### Reference:

Tober, D. and N. Jensen. 2013. Plant guide for little bluestem (*Schizachyrium scoparium*). USDA Natural Resources Conservation Service, Plant Materials Center, Bismarck, North Dakota 58501