

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

Plant Materials
Center
Brooksville, FL

Release of 'STUART'^{CV} Switchgrass Panicum virgatum

January 1996

A Native Grass for Range, Windbreaks,
Stabilization, Wildlife Habitat, Mine
Site Reclamation, and Biomass Production



UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

NOTICE OF SOURCE IDENTIFIED GERMPLASM RELEASE

'STUART' Switchgrass

The USDA, Natural Resources Conservation Service announces the naming and release of source identified 'Stuart' switchgrass, *Panicum virgatum* (L.).

This switchgrass has been assigned the NRCS accession number PI 422001.

ORIGIN:

'Stuart' was collected vegetatively January 29, 1959 from native grasslands at Stuart, Martin County, Florida (MLRA 155) by C. B. Blickensderfer, former SCS Plant Materials Technician. This site is at an elevation of less than 25 feet above sea level; it receives a yearly average rainfall of 57 inches; average yearly temperature for area is 75 degrees; and contains the Nettles soil series.

Urbanization of the Florida coastal areas has eliminated the vegetative material from the collection site therefore, the USDA - NRCS Plant Materials Center, 14119 Broad Street, Brooksville, Florida, 34601, will be the source of supply for this material.

ECOTYPE DESCRIPTION:

Typically, switchgrasses are warm-season perennial grasses resembling loose bunch-grass; erect from hard closely scaly rhizomes, with culms terete, hard, solitary or tufted, 0.3-2 m. high, green or purplish, sometimes slightly glaucous; leaves firm, elongate-linear, smooth, or scabrous on the margin and sometimes sparsely pilose near the base, flat, taper-pointed, 3-15 mm. wide; lower and middle sheaths exceeding the internodes, the upper shorter; panicles terminal, long-exserted, 0.5-5 dm. long, with spreading-ascending to strongly appressed branches; spikelets ovoid, acuminate, 2.8-6 mm. long, strongly nerved; 1st glume pointed, one-third to two-thirds the length of the spikelet; lower floret staminate; anthers about 2 mm. long, purplish, conspicuous; grains 2-3 mm. long. Seedheads form during late August and September. The Florida native switchgrasses do not appear to have a dormancy period.

'Stuart' switchgrass is similar to other switchgrasses found throughout the State of Florida however, there are distinct characteristic differences from other Florida native switchgrasses. 'Stuart' is highly rhizomatous; has coarse stems; moderate lodging; smooth fine leaf measuring an average of 1/2" in width and 24" in length; light green in color; internodes 9"; susceptible to mild leaf rust; seed matures later than the

cultivar 'Alamo' and other Florida native switchgrasses; attains an average height of 7'.

In Florida seed produced from this native grass has low germination.

In 1994, apical meristem squashes were examined by Dr. Andy Hopkins, Oklahoma State University, so chromosome counts were of somatic cells. Chromosome numbers are $2n = 4x = 36$ (tetraploid) for this Florida native switchgrass. Dr. Hopkins also reported there were no signs of winter damage to this assession there in Oklahoma. There was a total of only four days when the temperature failed to reach 0°C or greater, with the coldest temperature for 1993 being -15°C (5°F) and occured for only a brief period.

Field trials and personal observation, indicate 'Stuart' has potential uses for hay production, .rangesite improvement, wildlife habitat improvement, cut green forage, waterway vegetation, coastal area stabilization, mine reclamation, windbreaks, and bio-mass production.

LITERATURE REVIEW:

This preferred grass is highly selected by .livestock and in pure stands can produce 3 to 4 tons of dry forage and 100 to 150 pounds of seed per acre, but the number of pure live seed per pound is low. Switchgrass provides good spring, summer, and fall forage for cattle and can be used as a hay crop (Mullahey and Tanner, 1992). It grows equally well on the highly calcareous soils of central Texas and the wet, acid soils of south Florida. Also grows well in brackish marshes. Distribution is from the Rocky Mountains, south into Arizona and northern Mexico, east to the Atlantic coast (Leithead, Yarlett, and Shiflet, 1971). Plants of this species are all photoperiod sensitive and require short days to initiate flowering (Benedict, 1941). Perry and Baltensperger (1979) reported that N fertilization increased leaf production as compared to stem production, in plots at the University of Nebraska. Prescribed or controlled burning is important to increase or maintain forage quality of these warm-season grasses (Masters et al., 1990).

AVAILABLILITY OF PLANT MATERIALS:

Limited quantities of 'Stuart' switchgrass propagules are available from the Plant Materials Center, 14119 Broad Street, Brooksville, FL 34601.

REFERENCES:

Mullahey, J. Jeffrey and George W. Tanner. 1992. Circular.956 Florida Range Grasses Impacting Grazing Management. Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida.

Leithead, Horace L., Lewis L. Yarlett, and Thomas N. Shiflet. 1971. 100 native forage grasses in 11 southern states. Agriculture Handbook No. 389, Soil Conservation Service, USDA, Washington, D.C.

Perry, L. J. and David D. Baltensperger. 1979. Leaf and stem yields and forage quality of three N fertilized warm-season grasses. Agronomy Journal 71:355-358.

Benedict, H.M. 1941. Effect of day length and temperature on the flowering and growth of four species of grasses. J. Agric. Res. 61:661-72.

Masters, R.A., R. Stritzke, and S.S. Waller. 1990. Conducting a Prescribed Burn and Prescribed Burning Checklist. Univ. Nebr. Coop. Exp. Serv. Ext. Circ. EC 90-1211.

Approved by: T. Niles Glasgow _____ 3/12/96
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