USDA United States Department of Agriculture

A Conservation Plant Released by The Natural Resources Conservation Service
Brooksville Plant Materials Center, Brooksville, Florida

GATOR GERMPLASM

Muhlenberg maidencane

Amphicarpum muehlenbergianum (Schult.) Hitchc.

Gator Germplasm is a tested class of Muhlenberg maidencane [*Amphicarpum muehlenbergianum* (Schult.) Hitchc.]. More commonly known in Florida as 'blue maidencane', it was released by the USDA NRCS Brooksville Plant Materials Center, Brooksville, Florida, in 2007. Gator Germplasm (evaluated as accession no. 9959771) was selected from an assembly of 157 accessions of blue maidencane collected from throughout Florida. Gator Germplasm was selected for release due to its superior persistence under weed pressure.

Figure 1: Natural stand of blue maidencane near the USDA NRCS Brooksville Plant Materials Center, Brooksville, Florida.

Description

Gator Germplasm is a typical selection of blue maidencane which is a rhizomatous grass with stems 3-ft tall but are usually decumbent (lay down). The leaves are bluish green, lanceolate, 3- to 5-inches long; and ¼- to ½-inches wide with rough margins that frequently become white at maturity. The genus name *Amphicarpum* is derived from the Greek word that means doubly fruit-bearing because this grass produces two types of spikelets (flowers). The obvious ones are found in a 4- to 10-inch-long open panicle born on stems up to 3-ft tall. These spikelets are bisexual, but sterile. The subterranean spikelets are fertile, but made up of only female spikelets, produced on rhizomes that arise from the base of the stem (or occasionally from the lower nodes). The subterranean spikelets self-pollinate; due to its underground seed formation, this species is also commonly referred to as 'goobergrass'.

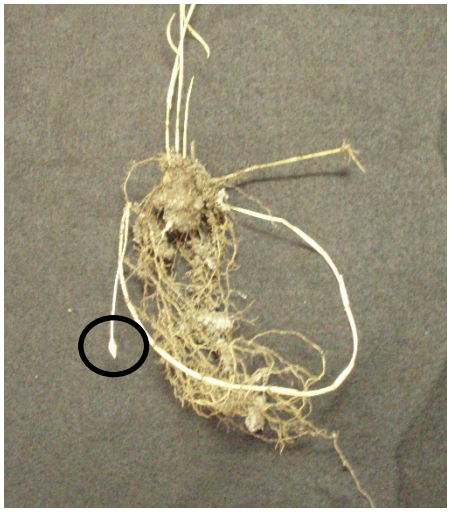

Figure 2: Crown and roots of excavated Gator Germplasm blue maidencane plant showing white rhizome terminated with underground seed. (in black circle).

Source

Gator Germplasm was collected by Sharon Pfaff and Robert Santucci in Citrus County, Florida, not far from its northeastern border with Marion County. The collection site is north of Tsala Apopka Lake and is in the floodplain of the Withlacoochee River, so it is often seasonally flooded.

Conservation Uses

Blue maidencane is classified as a facultative wetland species; therefore, Gator Germplasm is well adapted for use in freshwater wetland restoration sites and constructed wetlands for wastewater treatment. Gator Germplasm will form colonies with dense networks of roots and rhizomes and can provide excellent erosion control along the edges of ponds, streams, and ditches. Gator Germplasm has not been tested for grazing, but blue maidencane is a palatable grass that is considered an important component of flatwoods rangeland in southern Florida. Harvesting and spreading of Gator Germplasm rhizomes on constructed or restored wetland sites and for pasture and rangeland planting on suitable soils can be mechanized, using standard agronomic equipment commonly available in Florida.

Area of Adaptation and Use
Gator Germplasm adapted throughout Florida on appropriate soil types. It is well adapted to acid to neutral sandy soils that are wet for part of the year. It will not grow in deep, stagnant water. It has not undergone testing beyond Florida; however, the native range of the species extends north to the coastal areas of Georgia and southern South Carolina.

Establishment and Management for Conservation Plantings
Because aboveground spikelets of blue maidencane are sterile and its underground seeds are very limited and difficult to dig, field plantings are established vegetatively by rhizomes or greenhouse plugs. Prepare planting sites with mechanical cultivation, sprig or broadcast rhizomes and disk them in roughly 4-inches deep. Cultipack site after rhizomes are planted. The recommended planting rate is 20 bushels/acre of rhizomes. If plugs are used, set them on 18-inch centers or closer. Fertilizer applications are not recommended at any time during the life of a stand for conservation plantings. On appropriate sites, burning and/or disking in winter or early spring can reduce competition and help thicken stands. Blue maidencane is very nutritious and will be grazed by cattle most of the year; protect new stands from grazing during establishment. Established stands need a minimum of 120 days rest after a grazing event to ensure adequate stand persistence.

Locate rhizome production fields on upland sites with irrigation to facilitate rhizome harvesting. A minimum planting 20 bushels/acre of rhizomes is recommended, and higher rates will provide quicker coverage. Plugs transplanted on 18-inch centers can also be used to establish a production field. Fertilizer is not recommended during the establishment phase, but to enhance size and quantity of rhizomes in subsequent years, follow extension recommendations for low input warm season grasses. Do not harvest until at least 2 years after establishment with a minimum of a 2-year digging interval after the first harvest.

Individual plants can be propagated in the greenhouse by planting two, 4-inch-long rhizome pieces that have at least two nodes in plug tray cells. The growing medium should allow for ample drainage and be kept moist, but not wet. Keep cuttings in the greenhouse for at least three months to allow for ample root and shoot development. Fertigate plants throughout the nursery production period with a 100 ppm of a complete balanced soluble fertilizer such as 15-15-15 or 0.7 lb/100 ft^2 14-14-14 slow-release granular fertilizer.

Ecological Considerations
Gator Germplasm is a clonal line increased from materials naturally occurring in the region of anticipated use. Its vegetative rate of spread is not significantly greater than that of other blue maidencane plants found in its native range and the potential for widespread dispersal by seed is extremely limited.

Seed and Plant Production
Irrigated upland production fields could produce 2500 bushels/acre if hand dug. Yield will be lower if a sprig digger is used. A bushel of blue maidencane usually contains about 750, 6- to 8-inch-long rhizome pieces about the diameter of a pencil lead. Production of potted material is virtually unlimited from an acre of production field.

Availability
For conservation use: Gator Germplasm has been distributed to a limited number of native plant nurseries.

For seed or plant increase: G0 planting stock is maintained by the Brooksville Plant Materials Center. Rhizomes for commercial can be requested from the Manager, Brooksville Plant Materials Center, Brooksville, Florida.

For More Information
USDA NRCS Brooksville Plant Materials Center, 14119 Broad Street, Brooksville, FL 34610
Phone: 352-796-9600 (www.plant-materials.nrcs.usda.gov/flpmc).

Citation
Release Brochure for Gator Germplasm Muhlenberg Maidencane (*Amphicarpum muehlenbergianum*). 2023. USDA-Natural Resources Conservation Service, Brooksville Plant Materials Center. Brooksville, Florida.

For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <http://www.nrcs.usda.gov/>, and visit the PLANTS Web site <http://plants.usda.gov> or the Plant Materials Program Web site <http://www.plant-materials.nrcs.usda.gov>