

2012

December

Brooksville Plant Materials Center Progress Report of Activities

Conservation Concerns:

- Improve and Maintain Water Quality
- Control Erosion on Cropland and Stabilize Critical Areas
- Improve Forage on Pasture and Rangeland
- Improve Wildlife Habitat

About the PMC:

The PMC consists of 52 acres of cultivated fields and 126 acres of native woodland. It is located 7 miles north of Brooksville on US 41, 15 miles inland from the Gulf of Mexico. Our service area, indicated in green on the map below, includes all of Florida, Puerto Rico, and the US Virgin Islands; and the coastal areas of Georgia, South Carolina, and Alabama.



In this issue

- New Plant Release P. 1
- Germplasm Development P. 2
- Technology Development P. 2
- Publications and Presentations P. 3

Mission of the Brooksville Plant Materials Center

The *Brooksville Plant Materials Center* (PMC) is operated by the USDA, Natural Resources Conservation Service (NRCS). The mission of the Plant Materials Program is to deliver state-of-the-art plant science technology to meet the nation's natural resource conservation needs. To this end, we identify superior accessions of adapted plants which are tested and released for production by commercial growers. We also provide technical assistance in plant production and management methodologies. Evaluation and use of native plant materials is emphasized.

Effect of Mixed Cover Crop Species on Soil Health

The Brooksville PMC along with five other PMCs in California, Maryland, Missouri, North Dakota, and Washington are participating in a national study looking at the effect of different cover crop species on soil health. This project is a cooperative effort between the Plant Materials Program, NRCS's National Soil Health and Sustainability Team, NRCS's Kellogg Soil Survey Laboratory, and ARS's Grassland Soil and Water Research Laboratory.

Over the next three years, three seeding mixtures of up to six plant species will be planted at three seeding rates to observe their impact on soil health. Species included in the mixtures are cereal rye (*Secale cereale*), oats (*Avena sativa*), clover (either red clover, *Trifolium pratense*, or crimson clover, *T. incarnatum*), hairy vetch (*Vicia villosa*), tillage radish (*Raphanus sativus*), and another *Brassica* sp. Among other things, cover, biomass, soil biological assessment (e.g., N, P, K, carbon, etc.), and commodity crop (corn) production will be measured.



Planting (top), 30 days (right), and same plot at 45 days (bottom).



Germplasm Development

FLPMC-P-0904-UR Evaluation of powderpuff (*Mimosa strigillosa*): Powderpuff or herbaceous mimosa is a low-growing, spreading legume with clusters of tubular pink to purplish flowers. Florida ecotypes are readily available as potted plants, but seed is very limited. Accessions were planted at three locations in the state and rated for survival and spread in 2012.

FLPMC-P-9602-RA Evaluation of Lopsided Indiangrass (*Sorghastrum secundum*): Project discontinued due to commercial availability of seed from other sources.

FLPMC-P9605-RA Evaluation of Eastern Gamagrass (*Tripsacum dactyloides*): Accession 9059266 has been selected for joint release between PMC and University of Florida in 2015. Seed increase field established in Brooksville and Marianna.

FLPMC-P-0001-RA Evaluation of Native Switchgrass (*Panicum virgatum*): We are looking for better seed producing types of Florida-adapted switchgrass. Ploidy level (number of chromosome pairs) of PMC material determined and cooperative PMC and University of Florida committee formed to develop appropriate breeding protocol.

FLPMC-P-0108-RA Advanced Evaluation of Hairawn Muhly (*Muhlenbergia capillaris*) Seeded Types: Project discontinued due to commercial availability of seed from other sources.

FLPMC-P-0501-PA Evaluation of Slender Woodoats (*Chasmanthium laxum*): Project discontinued due to failure of evaluation blocks to perform well under field conditions.

FLPMC-P-0601-PA Rhizoma Perennial Peanut (*Arachis glabrata*) Cultivar Development: Germplasm turned over to University of Florida cooperator. Replicated plots established at the North Florida Research and Education Center in Quincy, FL.

FLPMC-P-0901-BF Development of Elephantgrass (*Pennisetum purpureum*) Germplasm for Bioenergy Production: Cooperative project with ARS breeder terminated due to failure of crossing blocks to flower prior to frost at the Brooksville PMC.

FLPMC-P-0905-WQ Evaluation of Pine Barren Goldenrod (*Solidago fistulosa*): Project discontinued due to commercial availability of seed from other sources.

FLPMC-P-0906-WO Evaluation of Coastal Plain Chaffhead (*Carphephorus corymbosus*): Project discontinued due to commercial availability of seed from other sources.

FLPMC-P-0907-WO Evaluation of Narrowleaf Silkgrass (*Pityopsis graminifolia*): Project discontinued due to loss of viability of previously collected seed.

FLPMC-P-1101-BF Diploid Lines of Eastern Gamagrass to Produce Perennial Corn Lines: The PMC is providing plant materials to a plant breeder at Cornell University to use in this project seeking to produce perennial corn germplasms.

Technology Development

FLPMC-T-0903-WL Native Seeding Rate for Hillsborough County: Establishment was poor both planting years and project has been discontinued.

FLPMC-T-1001-TE Effect of Greenhouse Propagation Method and Plant Out Treatments on the Establishment of Sweetgrass (*Muhlenbergia sericea*): Three container sizes with varying depths and volumes were used to propagate [Sea Islands germplasm sweetgrass](#) plants in the greenhouse. These were out planted at three sites, two coastal and one interior, on Daufuskie Island, South Carolina. Data was analyzed and an abstract and oral presentation on the results presented at 8th Eastern Native Grass Symposium.

FLPMC-T-1002-RA Forage Quality Sampling: Two types of samples, leaves only and the entire stem, of two eastern gamagrass accessions were harvested every other month starting in April 2011. Second year of sample collection completed and submitted to Dairy One for forage quality testing.

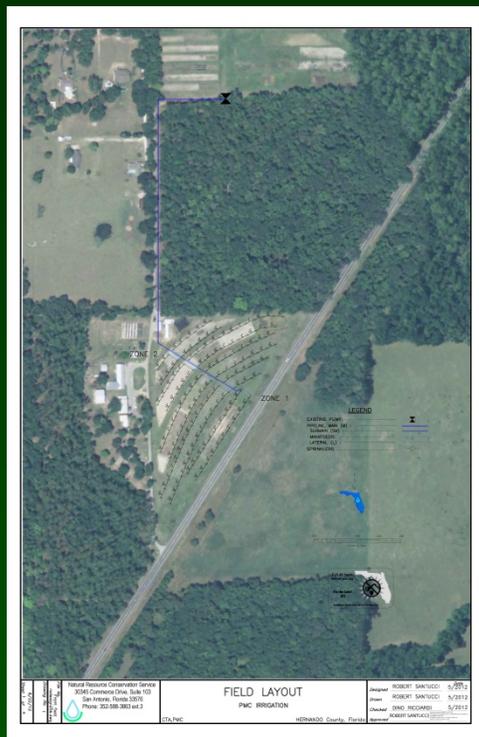
FLPMC-T-1003-WL Value of Native Perennial Plants for Pollinator Habitat: The PMC is working with the [Xerces Society for Invertebrate Conservation](#) to document flowering periods of six native trees and shrubs and seven native wildflowers that have good potential for use by pollinators of agricultural crops. Flowering period determinations continued throughout 2012.

FLPMC-T-1004-UR Survey of Sustainable Seed Harvesting Conditioning and Storage Methods for Florida Liatris: [The Florida Native Plant Society](#) provided funding to the PMC to test methods to effectively remove or decrease the length of the pappus bristles to make it easier to plant and improve marketability of *Liatris* seed produced in the state. The effect of four levels of pappus removal along with three storage temperatures on the viability of seed at 3, 6, 9, and 12 months storage was determined in 2012. A summary report was made to the funding agency, while a technical publication is to be developed in 2013.

FLPMC-T-1101-IN Evaluation of Native Species for Revegetation of Cogongrass-infested Sites Treated with Imazapyr Herbicide: The PMC is providing technical assistance to researchers at Florida A&M University in this research looking at a combination of herbicides and native grasses to control the spread of cogongrass (*Imperata cylindrica*). Cooperator is summarizing results of field trials.

FLPMC-T-1103-WL Seed Increase of Native Milkweed (*Asclepias*) Species to Provide Habitat for Monarch Butterflies in their Spring and Summer Breeding Sites: The PMC is again working with the [Xerces Society](#) to increase seed of two milkweed species to provide habitat for Monarch larvae. Greenhouse germinations indicated standard potting media worked best with the milkweed species tested and seedlings were out planted in the field in 2012.

Major Infrastructure Changes



Installation of the new irrigation system for the soil health study

Brooksville PMC Staff

Janet Grabowski, Manager
Mary Anne Gonter, Biological Science Technician (Plants)
Ed Black, Biological Science Technician (passed away August 21)
Jonathan Connolly, Gardner
Benjamin Sperry, Biological Aid, WAE

PMC information is available online at:
<http://www.fl.nrcs.usda.gov> or
<http://plant-materials.nrcs.usda.gov>

Carlos Suarez
Florida State Conservationist

Greg Hendricks
Florida State Resource Conservationist

M.J. (Mimi) Williams
Plant Materials Specialist

Publications:

Grabowski, J.M., M.J. Williams. 2012. [2011 Brooksville PMC Progress Report of Activities](#). Brooksville PMC, Brooksville, FL. December 2011. 4 p.

Williams, M.J., M.A. Gonter, and J.M. Grabowski. 2012. [December 2011 PMC Impact](#). Brooksville PMC, Brooksville, FL. 2 p.

Grabowski, J.M., M.J. Williams, R. Garcia, C. Beavers, J. Pederson, and M. Gonter. 2011. A [Evaluation of Bioengineering Techniques to Establish Woody Vegetation Along Margins of Restored Wetlands on Phosphate Minelands in Florida](#). 38th Annual Natural Areas Conference, 2 Nov. 2011, Tallahassee, FL.

Grabowski, J.M. 2011. [Muhlenbergia capillaris Purple Haze Germplasm](#). American Nurseryman 2012 New Plant Issue, December 2011. 1 p.

Castillo, M.S., L.E. Sollenberger, A.R. Blount, J.A. Ferrell, M.J. Williams, and C.L. Mackowiak. 2012. Strategies to Control Weed Competition in Strip-Planted Rhizoma Peanut in Existing Bahiagrass Pastures. [Proceed. 66th Southern Pasture and Forage Crop Improvement Conference](#). 6-9 June 2012. San Juan, PR. 1 p.

Grabowski, J., and M.J. Williams. 2011. [Survey of Sustainable Seed Harvesting, Conditioning, and Storage Methods for Florida *Liatris*: Interim Report, Oct. 2011](#). Brooksville PMC. 3 p.

Sigua, G.C., M. Williams, J. Grabowski, C. Chase, and M. Kongchum. 2012. [Effect of Flooding Duration and Nitrogen Fertilization on Yield and Protein Content of Three Forage Species](#). Agronomy J. 104:791-798.

Presentations:

Grabowski, J.M. 2011. An Evaluation of Bioengineering Techniques to Establish Woody Vegetation Along Margins of Restored Wetlands on Phosphate Minelands in Florida. 38th Annual Natural Areas Conference, 2 Nov. 2011, Tallahassee, FL.

Grabowski, J.M. 2011. You Might be a Redneck Plant ID. Brooksville PMC Native Plant Identification and Pollinator Planting Workshop. 15-16 Nov. 2011. Marianna, FL.

Williams, M.J., 2011. Considerations for Planting Native Wildflowers for Pollinators. Brooksville PMC Native Plant Identification and Pollinator Planting Workshop. 15-16 Nov. 2011. Marianna, FL.

Grabowski, J.M., and M.J. Williams. 2012. Purple Haze Germplasm Hairawn Muhly Release Presentation. 12 April 2012. UF Agronomy Dep. Gainesville, FL.

PMC Staff and M.J. Williams. 2012. Restoration Workshop and Field Trip to the Brooksville Plant Materials Center. 17 May 2012. Florida Native Plant Society Annual Conference.

Earth Day 2012



Visitors learning about old timey farm equipment. (top)

Kids speed harvesting the People's Garden at the PMC. (right)

Carlos Suarez, FL State Conservationist, planting memorial southern magnolia (*Magnolia grandiflora*) during Earth Day . (right)

