



United States Department of Agriculture

NRCS Jimmy Carter Plant Materials Center

2021 Progress Report of Activities

295 Morris Dr., Americus, GA 31709 | <http://plant-materials.nrcs.usda.gov/gapmc>

This report highlights the major activities at the Jimmy Carter Plant Materials Center (PMC) during 2021. For more detailed information, contact the PMC at 229-514-3245.

Studies and Demonstrations

Cover Crop Studies Continue at the PMC

The Jimmy Carter PMC continued its work on multiple cover crop related issues in 2021. Jimmy Carter PMC is partnered with other PMCs across the country to examine legume cover crop seeding rates in monocultures and in mixtures. This project looked at 5 legume species including crimson clover, berseem clover, Austrian winter pea, hairy vetch, and common vetch at 4 seeding rates. The legumes were also planted in a mixture with rye to examine how they perform as part of a mixture. This effort will provide vital information to conservation planners and farmers seeking to maximize cover crop production and minimize seed costs for legume covers.



Figure 1. Legume seeding rate plots at Jimmy Carter PMC prior to termination

Additionally, the Jimmy Carter PMC is part of a national project to breed and develop improved legume cover crops. This ARS coordinated effort is screening breeding lines of crimson clover, hairy vetch, and winter pea across the country to identify the lines that perform well in each region. The Jimmy Carter PMC serves as a great representative location for the deep south crop production region and has been participating in the project for 3 years now. In 2021, the Jimmy Carter PMC was asked to examine 11 lines of crimson clover, 20 lines of hairy vetch, and 30 lines of winter pea as part of this project. Evaluations such as emergence, plant vigor, disease and insect susceptibility, and biomass production are carried out, and findings returned to the plant breeders so that they can select for the best performing cultivars in each region. This work should culminate in commercially available legume cover crop cultivars that have shown to be productive in a given environment.

Dormant Season Management of Pollinator Habitat Plantings

The Jimmy Carter PMC took on an effort to demonstrate how dormant season management strategies effect the persistence of pollinator habitat plantings. The project applied 4 dormant season management techniques to previously planted pollinator habitat blocks. The management techniques included burning, light disking, mowing, and doing nothing. The plots were examined in the following growing season to determine any effects that the different management strategies had on a given planting. Any differences in species composition, species growth and vigor, weed control, and overall productivity and persistence of the planting were recorded.

Preliminary results indicate that some attributes of the planting, especially weed management, are influenced by the dormant season management technique that is chosen.



Figure 2. Burning (left) and disking (right) were two treatments applied to pollinator habitat plantings to demonstrate potential dormant season management techniques

Technology Transfer

Technical Assistance

The Jimmy Carter Plant Materials Center was asked to participate in a large, in-field research project beginning in 2021. This 2-year project was a collaboration between University of Georgia Cooperative Extension, Golden Triangle RC&D, the Georgia Association of Conservation Districts, the Georgia Soil and Water Conservation Commission, and the Jimmy Carter Plant Materials Center. The goal of the project was to showcase 4 different cover crop options in large plots and demonstrate the benefits the cover crop could provide in a traditional row crop setting. The PMC assisted with determining suitable cover crop mixes to use, establishing appropriate seeding rates for the mixes, ensuring cover crop species were mixed and inoculated correctly, and determining grain drill calibration and depth settings prior to planting. Additionally, the PMC was called on to determine cover crop biomass production for fertilizer credit analysis and to identify the best cover crop termination methods and timing. University of Georgia Cooperative Extension collected a variety of additional data in the project including cash crop yield, fertilizer usage, in-season soil moisture measurements, and production costs of the cover crop and cash crop. This project will provide insight into how the cover cropping system changes the overall management regime of traditional row crop production in the region. The project is ongoing and has received some interest from various farm magazines and publications and in the region as well as being the site for multiple farmer field days last year.



Figure 3. Southeast FarmPress cover featuring the large, on-farm cover crop project worked on by many collaborators including Jimmy Carter PMC

Technical Documents

The National Technical Note No. 6 [Selecting, Planting, and Managing Grasses for Vegetative Barriers](#) was completed and published in 2021. This project evaluated both warm and cool season perennial grasses for their usefulness in vegetative barriers. The document also compiled planting and maintenance information that conservation planners and farmers should consider before installing this vegetative conservation practice. This should provide another tool to stop erosion in fields where terracing or other more invasive practices may not be feasible or desired.

The East Regional Technical Note No. 4 [Giant Cane and Other Native Bamboos: Establishment and Use for Conservation of Natural Resources in the Southeast](#) is published. Plant Materials Centers (PMCs) in Brooksville, FL and Americus, GA compiled and reviewed existing literature to develop this guidance document for establishing and managing giant cane stands. This document will assist those conservation planners and landowners that are interested in promoting the use of this culturally significant plant species.

Georgia Technical Note No. 26 [Persistence of 'Chisolm' Summer-Dormant Tall Fescue in the Georgia Coastal Plain](#) is available. This study evaluated a new, commercially available Summer Dormant Tall Fescue variety against two Tall Fescue varieties more commonly used in the state. The goal was to determine if the Summer Dormant variety would allow for expanded use of tall fescue in regions where it is not commonly grown. The findings will assist those conservation planners and farmers that are considering using tall fescue in a conservation planting.

Georgia Technical Note No. 27 [Evaluation of Little Bluestem Selections for Conservation in the Georgia Coastal Plain](#) is also available. This project allowed the direct comparison of 4 Little Bluestem lines to determine their growth habit and potential in the region. Data was collected from the 4 lines for 3 years to perform a comparative analysis that will be useful in plant selection for several NRCS practices.

The [2020 Jimmy Carter Plant Materials Center Progress Report of Activities](#) is available. Each year JCPMC prepares a summary of highlights occurring at the center. The Progress Report of Activities is widely distributed to the Southeast region states and posted to the [GAPMC website](#).

All published documents from the Jimmy Carter Plant Materials Center are available on the [GAPMC](#) page of Plant Materials Website.

Tours, Presentations, and Trainings

Cover Crop Field Day- Nick McGhee was a guest speaker at a cover crop field day hosted by University of Georgia Cooperative Extension. He spoke about cover crop variety selection, planting dates, and seeding rates commonly used in local crop rotations.

Introduction to the Plant Materials Program and Current JCPMC Projects – Richard Barrett and Nick McGhee presented an introduction to the Plant Materials Program and an overview of current PMC Projects to employees from South Carolina and Georgia field offices.

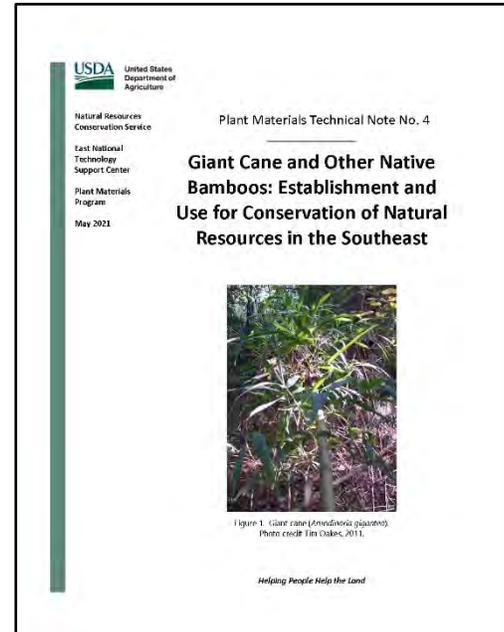


Figure 4. Cover of ENTSC Tech Note 4 discussing Giant Cane and other Native Bamboos

Poster Presentations- Nick McGhee assisted in the data collection and review for a poster authored and presented by University of Georgia graduate student Madison Harkins at several farm and research meeting poster sessions. The poster, titled “[An Analysis of Cover Crop Use in Southeastern Row Crop Production: Economics, Production Practices, and Perceptions](#)” is currently available on the GAPMC publications webpage.

The Jimmy Carter PMC: Who We Are

The PMC selects plants and develops innovative planting technology to solve the nation’s most important resource concerns. Our mission is to develop, test, and transfer effective state-of-the-art plant science technology to meet our customer and resource needs.

...And What We Do

Plant Materials Centers work to provide vegetative solutions and technology to address conservation resource concerns through a network of 25 centers across the country. We carry out our mission through research, demonstration, and training. The priority work of the JCPMC is supporting the NRCS soil health initiative. At the core of this, is research on cover crops investigating species, cultivars, and seeding rates that are best adapted to our region.

The PMC works in partnership with the Natural Resources Conservation Service (NRCS) field offices, resource conservation and development groups, conservation districts, federal and state agencies, non-profit groups and private landowners.

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Figure 5. Entrance Sign to Jimmy Carter Plant Materials Center

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