



United States Department of Agriculture

NRCS Jimmy Carter Plant Materials Center

# 2022 Progress Report of Activities

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

This report highlights the major activities at the Jimmy Carter Plant Materials Center (PMC) during 2022. For more detailed information, contact the PMC at 229-514-3245.

## Studies and Demonstrations

### Cereal Rye Cover Crop Planting Date and Cultivar Interaction Project Begins

The Jimmy Carter PMC began a new project in 2022 to evaluate the effect that planting date and cereal rye variety selection can have on cover crop performance. The project is designed to examine three cultivars of cereal rye, determined to be representative of an “early-season”, “mid-season”, and “late-season” rye cultivar by previous work at the PMC. The representative cultivars include ‘FL401’ as the “early-season” cultivar, ‘Wrens Abruzzi’ as the “mid-season” cultivar, and ‘Aroostook’ as the “late-season” cultivar. These cultivars will be planted at various dates throughout the fall cover crop planting season and allowed to grow to typical spring cover crop termination timings. Planting dates from mid-September through mid-December and termination dates from mid-February through mid-May have been selected as they extend beyond the dates when most producers utilize cereal rye as a cover crop.

Plant height and dry biomass production will be measured at each planting date/termination timing to estimate yield potential for each cultivar in each scenario. Additionally, ground cover ratings are being gathered throughout the growing season to examine the erosion protection potential of each planting. This project is being carried out at the Florida PMC as well to provide similar data across a wider geographical range. The findings from this project should provide field office staff and other conservation planners with valuable information for selecting appropriate cereal rye cultivars for a given planting date and termination date scenario.



Figure 1. Growth of 'FL401' Cereal Rye (Left) and 'Wrens Abruzzi' Cereal Rye (Right) in February when planted in late October

### Black Oat and Black Seeded Oat Cover Crop Evaluation for Erosion Prediction Tools

Black oat (*Avena strigosa*) and a black-seeded oat (*Avena sativa*) are being grown on the Jimmy Carter PMC and evaluated to provide plant growth data for NRCS erosion prediction tools. The black oat cultivar ‘Soil Saver’ has





Figure 2. Terminating 'Soil Saver' Black Oat to determine residue persistence

been recommended as a cover crop across the southern U.S. for many years, though seed availability and grower familiarity has limited its use. The species is also somewhat cold-sensitive, limiting its use as an overwintering cover crop to the deep south. The black-seeded oat cultivar 'Cosaque' is the same species as other common oats planted in the region but has a unique dark seed coat unlike many other oat cultivars. Cosaque has gained popularity as a cover crop in recent years as seed has become more available and producers become more comfortable with its use.

Data collected at the PMC for both oat species are being provided to NRCS specialists to include in current erosion prediction tools so that the computer models can better predict the performance of these new cover crop options. Data collected include periodic plant height and ground cover evaluations, dry biomass production, and residue persistence after termination. This project is being repeated at the PMCs in east Texas and Arizona to better canvass the potential growing regions of Soil Saver black oat. Once the project is finished, multiple NRCS erosion prediction tools will utilize the findings to provide better erosion estimates to planners who choose to utilize these oat cultivars.

### Observational Planting of Native Plant Materials in the South

The Jimmy Carter PMC, with a group of seven PMCs from Missouri to central Florida, began evaluating native plant materials across the southeastern and southcentral United States in 2022. The plant materials being evaluated include 23 newer selections and cultivars of native plants developed by both the Plant Materials Program and in some cases university partners along with 6 commercial check selections. The list of plant material entries into this project is included in Table 1. The plant materials are being evaluated for several growth characteristics including plant height and vigor, seed production, disease and insect susceptibility, and plant persistence. This information will allow for more robust geographical ranges of adaptation to be developed for each entry, ensuring that planners and landowners across the region are utilizing the most appropriate and adapted plant materials in their conservation plans.



Figure 3. Pineland Gold Germplasm swamp sunflower in full bloom at Jimmy Carter PMC

Table 1. Plant Material Cultivars and Selections included in Jimmy Carter PMC Observational Planting	
Tusca Germplasm switchgrass	Coastal Plains Germplasm little bluestem
Espresso Germplasm switchgrass	Cappuccino Germplasm little bluestem
Robusto Germplasm switchgrass	USFS Pinehill Germplasm little bluestem
‘Alamo’ switchgrass	‘Aldous’ little bluestem
Excelso Germplasm indiagrass	Copiah Germplasm southeastern wildrye
‘Americus’ indiagrass	Coahoma Germplasm southeastern wildrye
‘Nacogdoches’ eastern gamagrass	‘Kinchafoonee’ Virginia wildrye
WVPMC Germplasm eastern gamagrass	VNS Virginia wildrye
Sunrise Germplasm eastern gamagrass	Harrison Germplasm Florida paspalum
‘Highlander’ eastern gamagrass	Pilgrim Germplasm velvet rosette grass
Supremo Germplasm big bluestem	Crockett Germplasm herbaceous mimosa
Refuge Germplasm big bluestem	Cajun Sunrise Germplasm ashy sunflower
OZ-70 Germplasm big bluestem	Pineland Gold Germplasm swamp sunflower
‘Rountree’ big bluestem	Pineywoods Germplasm thickspike gayfeather
Neches Germplasm splitbeard bluestem	

## Tours, Presentations, and Trainings

Soil Health and Sustainability for Field Staff- Nick McGhee assisted Georgia State Office Technical Staff and Soil Health Division Staff in teaching Soil Health and Sustainability for Field Staff. Nick focused on teaching the cover crop management portion of the course as well as leading two workshops to assist field staff with the in-field soil health assessment worksheet.

Reinvigorating Conservation Planning Online Workshop Series- Nick McGhee taught multiple sessions as part of the reinvigorating conservation planning training series to Georgia conservation planners. Topics for these sessions included: “Plant Materials Program and PMC Overview”, “Cover Crop Management in Georgia”, and “Warm-Season Native Grasses Usage in Georgia”.

Rainfall Simulator Demonstrations- Nick McGhee performed several rainfall simulator demonstrations for various employee, partner, and landowner/producer groups during 2022. The simulator was also displayed as part of the NRCS tent at the 3-day Sunbelt Ag Expo event.

## New Manager at Jimmy Carter PMC

Nick McGhee was selected to be the new manager at the Jimmy Carter PMC in 2022. Nick transitioned to the PMC manager role after serving 6 years in the study leader position. Prior to his work at the PMC, Nick was an extension agent with UGA Extension in Terrell County, Georgia, where he worked primarily with row crop producers in a variety of crops including corn, cotton, peanuts, and soybeans. Nick is a graduate of University of Georgia where he majored in Agriscience and Environmental Systems. With Nick’s change in position at the PMC, this leaves the study leader position currently vacant. Once the study leader position is filled, the Jimmy Carter PMC will be fully staffed and prepared to provide NRCS field offices the plant-based answers that are needed.



Figure 4. Photo of new Jimmy Carter PMC Manager Nick McGhee



## 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.

## PMC Staff

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Figure 5. Entrance Sign to Jimmy Carter Plant Materials Center