



United States Department of Agriculture

NRCS Jimmy Carter Plant Materials Center

2023 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 2023.

Testing of Advanced Breeder Lines of Hairy Vetch, Winter Peas, and Crimson Clover Cover Crops in the Southern Coastal Plain

In 2023, the Jimmy Carter PMC evaluated breeder lines of hairy vetch (*Vicia villosa*), winter pea (*Pisum sativum*), and crimson clover (*Trifolium incarnatum*) as part of a continued national project to develop improved legume cover crop selections for conservation planners and farmers. The project, which began in 2018, has research sites across the nation and the Jimmy Carter PMC represents the deep south production area as a part of this larger group. This year, the Jimmy Carter PMC evaluated 28 hairy vetch lines (Figure 1), 34 winter pea lines, and 12 crimson clover lines and

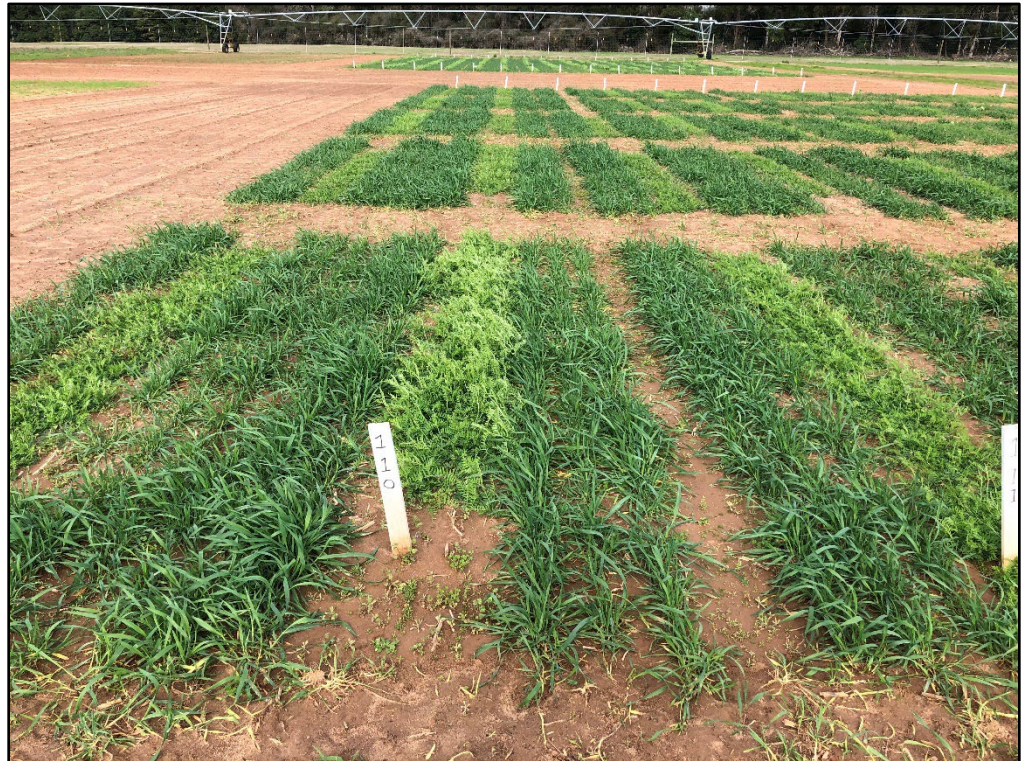


Figure 1. Advanced Breeder Lines of Hairy Vetch growing at Jimmy Carter PMC

documented their growth characteristics in this region. There is already one hairy vetch line set to be released as a result of this project, and a few other selections of each plant species showing promise in our area. The Jimmy Carter PMC will continue to be a part of this important work through at least FY24, ensuring that conservation planners have the plant materials and information they need to utilize these legume cover crop species effectively.

A Comparison of Cereal Rye Cultivars at various planting and termination dates

The Jimmy Carter PMC began a new study in 2023 to evaluate the effect that cereal rye cultivar selection can have on rye cover crop performance at various fall planting and spring termination timings. The cultivars evaluated were 'FL401', an early-maturing rye, and 'Wrens Abruzzi', a mid-season maturing rye that is commonly used in the region. These two cultivars were planted at 3 planting dates, from mid-October through mid-December, and terminated at 4 termination dates, from mid-February through mid-May. The studies objectives were to determine if the early-maturing rye cultivar could be used during shortened growing seasons to

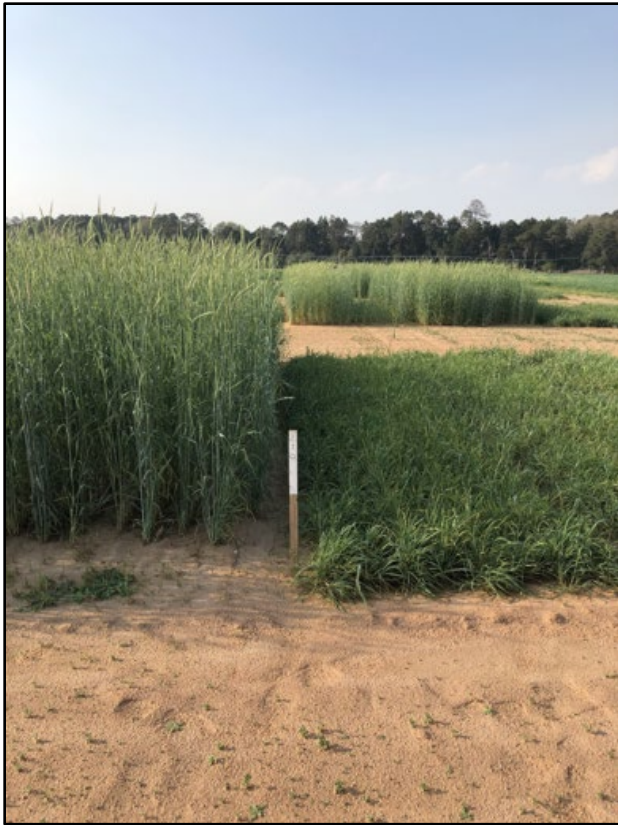


Figure 2. Early maturing rye (left) and mid-season maturing rye (right) in early March when planted in mid-November at Jimmy Carter PMC



Figure 3. Harvest of 'Americus' Indiangrass seed at the Jimmy Carter PMC

increase cover crop biomass produced and allow for later planting of cover crops. Other attributes like number of days until canopy closure, percent canopy cover, and plant height were collected throughout the season to evaluate the productivity of each cultivar in each growing season scenario. Initial indications are that using an early maturing rye cultivar, like 'FL401', can result in greater cover crop productivity in certain growing season scenarios, but more data is needed to have confidence in where it is best for conservation planners to use each cultivar effectively (Figure 2).

Reinvigoration of Existing Conservation Plant Releases

The Jimmy Carter PMC worked towards reinvigorating multiple conservation plant releases during FY23. One of those releases was 'Americus' Indiangrass (*Sorghastrum nutans*). Americus was originally released in cooperation with the Alabama Crop Improvement Association in 2002. It has performed well in across most of the Southeast and should be suited well for uses such as field borders, wildlife habitat, and native prairie and understory plantings. It also could be used in native forage plantings, especially in a mix with other native grass species. In 2023, the Jimmy Carter PMC also submitted samples of Americus Indiangrass and several other wild Indiangrass collections from the Southeast for genetic analysis. The results of this should provide valuable information on the genetic diversity and adapted range of Americus Indiangrass. Limited work suggests that Americus Indiangrass is adapted to and productive in many environments across the Southeast from Georgia to East Texas. Jimmy Carter PMC harvested seed from our Americus Indiangrass plantings this year (Figure 3) and will be looking to partner with field offices and landowners to install demonstration plantings in FY24. More information on this conservation plant release can be found in the [Americus Indiangrass release brochure](#).

Another Conservation Plant Release that the Jimmy Carter PMC is actively working to revitalize is a sweet crabapple (*Malus coronaria*) cultivar named 'Big O'. Big O was originally collected in 1974 in Floyd County, Ga and was selected due to its superior fruit production, vigor, and long-term survivability. Big O also produces a larger fruit than the other crabapples that were evaluated. Big O was originally released in 1992 for use in wildlife plantings and hedgerows. In 2023, the Jimmy Carter PMC partnered with the [University of Tennessee Tree Improvement Program](#) to produce new breeder stock of Big O and begin evaluating its performance across a broader selection of

MLRAs in the Southeast and Mid-South (Figure 4). This work takes time, but we hope to have plant materials available for commercial nurseries in the next few years.



Figure 4. (Left) Prepared 'Big O' Crabapple cutting for rooting medium, (Right) 'Big O' cuttings in a rooting bed at University of Tennessee Tree Improvement Program (photo credit: Dr. Scott Schlarbaum, University of Tennessee)

Tours, Presentations, and Trainings

The Jimmy Carter PMC hosted or offered several training opportunities for NRCS field staff and the public in 2023. The PMC served as the site of a multi-day basic soils training. Participants were able to learn basic soils information from Georgia NRCS Soils staff and then examine soil pits for the various soil types located on the Jimmy Carter PMC (Figure 5). PMC staff also offered several soil health, cover crop, and rainfall simulator demonstrations at meetings and conferences at the 2023 Fort Valley State University Outreach Event and the 2023 Sunbelt Ag Expo.

Nick McGhee, Jimmy Carter PMC Manager also made invited presentations on the recent research work and findings of the PMC at the 2023 Georgia Conservation Tillage Alliance Annual Meeting, the 2023 Georgia Soil and Water Conservation Society Annual Meeting, other county producer/landowner meetings with NRCS field staff and UGA extension agents.

The Jimmy Carter PMC Staff offered several online training opportunities for NRCS field staff on topics such as “Fall Seed and Planting Considerations”, “Cover Crop Usage in Organic Systems”, “Using legume cover crops to create cover crop nitrogen credits in cropping systems”, and “Selecting cover crop species and varieties in the Southeast”.



Figure 5. NRCS Field Staff learn about soils common in the Southern Coastal Plain MLRA while at the Jimmy Carter PMC

New Study Leader at Jimmy Carter PMC

Richard Barrett was selected as the study leader for JCPMC beginning his duties in April. Richard has worked with NRCS and the Plant Materials Program previously, returning from Agriculture Research Service (ARS). His previous work gives him experience in cover crop research, a primary component of the program at JCPMC. Richard is a graduate of the University of Georgia majoring in agronomy.

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

PMC Manager: Nick McGhee
Study Leader: Richard Barrett
Farm Foreman: G. Clyde Johnson



Figure 6. Entrance Sign to Jimmy Carter Plant Materials Center

Address

Jimmy Carter Plant Materials Center
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