



USDA-NRCS James E. “Bud” Smith Plant Materials Center

2017 Progress Report of Activities

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National Cover Crop Species Adaptability Study

The Knox City Plant Materials Center is participating in a national cover crop species adaptability study with other centers across the nation. The objective of the study is to evaluate germination and field emergence, bloom and flowering period, height, disease and insect resistance, and winter hardiness of commercially available varieties/cultivars and local sources of selected cover crops identified by NRCS State Agronomists/Soil Health Contacts and PMC staff. The species being evaluated are:

- Crimson Clover
- Red Clover
- Balansa Clover
- Hairy Vetch
- Austrian Winter Pea
- Cereal Rye
- Black Oats
- Daikon Radish

This study will also provide cover crop adaptation and growth data for different geographical regions of the U.S., and inform local recommendations for cover crops as well as future soil health studies.



Trainings and Presentations



Trainings and outreach continues to be emphasized at the Plant Materials Center. Last year two trainings were held for NRCS field staff on prescribed burning and soil health. Attendees were given the opportunity to gain hands-on experience with fire behavior on different plant species and fuel loads. The soil health training evaluated equipment and management practices used



in cotton and wheat cropping systems. The plant materials center also had the opportunity to conduct various presentations and tours throughout the year for local groups and conferences.

- Texas Native Plant Conference
- Importance of Trees
- Methods and Equipment for Successful Grass Plantings
- Soil Stewardship Tour
- Northwest Pollinator Planting Demonstration



Seed Production

The PMC is responsible for producing breeder seed of cultivar releases and G0 seed of germplasm. Currently, the PMC maintains and supplies seed for twenty-seven releases.

- ‘Haskell’ sideoats grama (*Bouteloua curtipendula*)
- ‘Lometa’ Indiangrass (*Sorghastrum nutans*)
- ‘Alamo’ switchgrass (*Panicum virgatum*)
- ‘Mason’ sandhill lovegrass (*Eragrostis trichodes*)
- ‘Van Horn’ green sprangletop (*Leptochloa dubiad*)
- ‘Earl’ big bluestem (*Andropogon gerardii*)
- ‘Saltalk’ alkali sacaton (*Sporobolus airoides*)
- ‘San Marocs’ eastern gamagrass (*Tripscaum dactyloides*)
- Potter County germplasm spike dropseed (*Sporobolus contractus*)
- Borden County germplasm sand dropseed (*Sporobolus cryptandrus*)
- Cottle County germplasm sand bluestem (*Andropogon halli*)
- OK select germplasm little bluestem (*Schizachyrium scoparium*)
- Duck Creek germplasm Texas dropseed (*Sporobolus texanus*)
- ‘Selection 75’ kleingrass (*Panicum coloratum*)
- ‘Shoreline’ common reed (*Phragmites australis*)
- ‘Sabine’ Illinois bundleflower (*Desmanthus illinoensis*)
- ‘Comanche’ partridge pea (*Chamaecrista fasciculata*)
- Hondo germplasm velvet bundleflower (*Desmanthus velutinus*)
- Cuero germplasm purple prairie clover (*Dalea purpurea*)
- Plains germplasm prairie acacia (*Acacia angustissima*)
- ‘Aztec’ maximilian sunflower (*Helianthus maximiliani*)
- ‘Plateau’ awnless bushsunflower (*Simsia calva*)
- Kerr germplasm Wright pavonia (*Pavonia lasiopetala*)
- ‘Eldorado’ engelmann’s daisy (*Engelmannia peristenia*)
- Rainbow germplasm wild plum (*Prunus* sp.)
- Yellowpuff germplasm littleleaf leadtree (*Leucaena retusa*)
- ‘Boomer’ bur oak (*Quercus macrocarpa*)



Plant Collections and Evaluations

Plant development continues to be an emphasis of the plant materials program. The PMC is currently collecting four native, perennial plant species for evaluation in various conservation uses. The species are:

- Showy menodora (*Menodora longiflora*)
- Blue salvia (*Salvia azurea*)
- Willowleaf sunflower (*Helianthus salicifolius*)
- Narrowleaf globemallow (*Sphaeralcea angustifolia*)

The PMC relies heavily on zone and field staff for obtaining the plant collections used in our evaluations. So far, sixty-eight collections have been submitted for evaluation. These materials ensure that future plant releases represent a broad area of adaptation. We appreciate the time and effort made by the following individuals to submit these collections.



<u>Blue Salvia</u>	<u>Narrowleaf Globemallow</u>	<u>Showy Menodora</u>	<u>Willowleaf Sunflower</u>
Troy Reinke	Mark Sides	Ricky Linex	Charlie Schur
Gary Franke	Ricky Linex	Steve Nelle	Ricky Linex
Alex Smith	Alfredo Munoz	Tyler Hinrichs	Brian Rohmer
Ricky Linex	Kirk Dahl	Ty Allen	Jason Gerngross
	Laurie Meadows	Rob Ziehr	Melvin Slagle
	Nathan Shrode	Tom Payton	James Bilbrey
	Mary Whitworth	Tori Dutton	
	Rustin Tobor	Brenda Gibson	
	Michelle Downey	Alex Homesley	
	Matthew Coffman		

For more information on these plant species, see the website at <https://www.nrcs.usda.gov/wps/portal/nrcs/main/tx/plantsanimals/> and click on Texas Plant Materials Center, then James E. “Bud” Smith PMC.

James E. “Bud” Smith Plant Materials Center

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) James E. “Bud” Smith Plant Materials Center (PMC) located near Knox City, Texas, was established in 1965. It is one of the 27 Centers located throughout the United States. The Center is responsible for developing conservation plants and cultural techniques for use within targeted Major Land Resource Areas (MLRA) in Texas, Oklahoma, Kansas, Colorado, and New Mexico. The Center is also responsible for producing Breeder and Foundation seed of plant releases and assisting in commercial development and promoting their use in natural resource conservation. The PMC serves all or portions of 136 counties in Texas that comprises parts of 25 MLRAs, and the areas served in all or portions of 39 counties in southwestern Oklahoma comprising parts of thirteen MLRAs. The PMC also serves a portion of seven counties in southwestern Kansas including parts of four MLRAs, a portion of one county in the southeastern corner of Colorado comprising parts of three MLRAs, and a portion of seven counties in eastern New Mexico comprising parts of seven MLRAs. The PMC is located approximately four and a half miles northwest of Knox City, Texas, in the Rolling Red Plains MLRA.



Program Emphasis

The mission of the James E. “Bud” Smith PMC is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. The PMC conducts plantings and studies at the Center and off center with cooperating partners. Plant and technology development objectives of the PMC include:

- Soil Health
- Erosion Control - wind and water
- Range and Pasture Improvement
- Wildlife Habitat Improvement
- Water Quality Improvement on Agricultural Land
- Biofuels
- Saline Site Restoration

PMC Staff

- Brandon Carr- Manager
- Randy Kuehler- Biological Science Technician (Plants)

Visit the PMC website for more information and publications:

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/plantmaterials/pmc/central/txpmc/>

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