

James E. “Bud” Smith Plant Materials Center 2010 Progress Report of Activities



3950 FM 1292
Knox City, TX 79529
Phone: 940-658-3922 ext. 5
Fax: 940-658-3095

<http://plant-materials.nrcs.usda.gov/txpmc/>

Comparison of Warm Season Perennial Species for Biomass Production

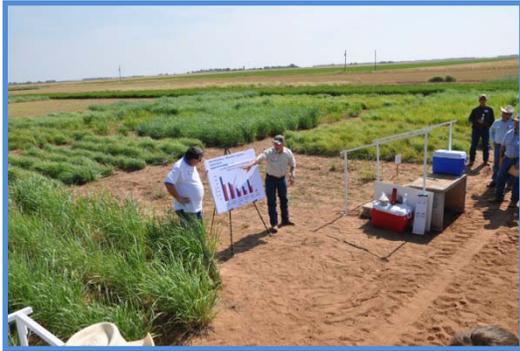
Extensive studies have been conducted comparing various warm season grasses for biomass production and quality. While switchgrass (*Panicum virgatum*) has proven to be one of the leading biomass energy crops, other perennial species such as Maximilian sunflower (*Helianthus maximilian*) and big sacaton (*Sporobolus wrightii*) may prove to have substantial biomass production and quality. This new study will compare the biomass production and quality of these releases:



- ‘Prairie Gold’ maximilian sunflower
- ‘Aztec’ maximilian sunflower
- ‘Alamo’ Switchgrass
- ‘Cimarron’ Switchgrass
- Falfurrias Germplasm Big Sacaton



Evaluating Warm Season Grasses for Biofuel



A great deal of emphasis is being placed on finding native plants that can be used in biofuel production. Crops are grown for direct combustion or gasification to generate electricity; ethanol production for transportation fuel; or thermochemical conversion into other by products. Time and frequency of harvest play a major role in biofuels quality. Data in 2009

showed no statistical difference between harvest dates of the same variety for biomass production. Due to above normal precipitation in the winter months, including snow, ice and rainfall, data from 2010 proved that biomass yield can be affected by weathering through the winter and into the spring months.



Late Planting Date of 'Tropic Sun' Sunn Hemp

Our PMC is participating in a nationwide test to determine the areas of the country with potential to use sunn hemp as a green manure and cover crop. Sunn hemp is a tropical or sub-tropic plant that can produce from 5,000-6,000 pounds of biomass per acre. It is an annual plant when grown in the continental United States, and can produce 120-140 pounds of nitrogen in 60-90 days. Plants at the PMC averaged 11½ feet tall (under supplemental irrigation) when the growing season was complete. The plots did produce seed pods, but no viable seed was harvested.



New Collections



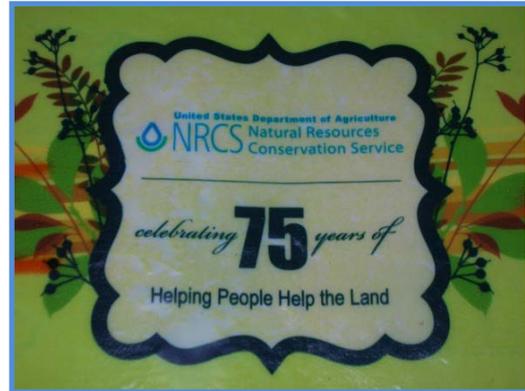
The PMC is collecting seven native, perennial plant species for evaluation for various conservation uses. The species are three-flower melic (*Melica nitens*), showy menodora (*Menodora longiflora*), Texas cupgrass (*Eriochloa sericea*), prairie bundleflower (*Desmanthus leptolobus*), western wheatgrass (*Pascopyrum smithii*), knotgrass (*Paspalum distichum*), and smartweed (*Polygonum pensylvanicum*). For more information on these plant species, see the website at <http://www.tx.nrcs.usda.gov/technical/pmc> and click on James E. "Bud" Smith PMC.

These plant species will be evaluated for potential use in conservation practices such as Range Planting, Upland Wildlife Habitat Management, Conservation Cover Riparian Herbaceous Cover, and others.

75th NRCS Anniversary Field Day and Training

This year marks the 75th anniversary of the Natural Resource Conservation Service (NRCS). It also marks the 45th anniversary of the James E. “Bud” Smith Plant Materials Center in Knox City, TX. On June 8th and 9th, the PMC hosted two field days to celebrate these milestones.

June 8th was open to the general public and included several key note speakers. State Conservationist, Don Gohmert, kicked the day off by welcoming the guest and outlining the events of the day. James Abbott, retired NRCS, gave a history of the James E. “Bud” Smith Plant Materials Center. Attendees were then given the opportunity to tour the new service center and PMC. Several stops highlighted the new service center building, breeder’s blocks, production blocks, different tests being conducted at the center, and the new greenhouse. During lunch, the group listened to Lewis T. Britt, District Director for the Honorable William Thornberry. After lunch, Chip Ruthven, Texas Parks and Wildlife Department, and Jan Hatler, Texas Department of Agriculture, discussed plants and plant materials for quail and pesticide applicator rules and regulations. The day ended with participants attending training sessions on various subjects. Mary Kay Hicks, Texas Forest Service, discussed planning and preparing for wildfires. Alan Shadow and John Lloyd-Reilley, PMC Managers, demonstrated how to calibrate sprayers and grass drills. A conservation tillage demonstration was given by Willie Durham and Andy Spencer, NRCS. Sandra Offutt, Texas Smartscape Program, discussed landscaping with native plants.



On June 9th, the PMC went a little more technical and focused primarily on NRCS staff and NRCS partners. Don Gohmert once again welcomed the guests, and then Susan Baggett and Rob Ziehr discussed the role of the Plant Materials Center and Conservation Planning. Afterwards, attendees toured the PMC and new service center. Following lunch, several different training sessions were offered to educate participants on: design and maintenance of windbreaks, plant materials for wildlife plantings, calibrating herbicide sprayers and grass drills, plant materials for conservation planning, grazing and management of wetlands, forage inventories and plant identification, seed collection and handling, implement id, and conservation tillage demonstrations.

Seed Production

The PMC is responsible for producing breeder seed of cultivar releases and G0 seed of germplasm releases which is sold by the Texas Foundation Seed Service to area seed companies. A full list can be obtained from their website at <http://tfss.tamu.edu> or by calling them at (940) 552-6226. Currently, the PMC maintains and supplies seed for twenty-nine releases. These releases include grasses, legumes, forbs, and woody plants. A complete list of plant releases can be found at our website at <http://Plant-Materials.nrcs.usda.gov/txpmc/>.

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:

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

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.



James E. “Bud” Smith PMC Personnel

- Dr. Gary Rea- Manager
- Brandon Carr- Soil Conservationist
- Randy Kuehler- Biological Science Technician (Plants)
- Mark S. Bennett- Biological Science Aid (Intermittent, summer only)

Visit the PMC website for more information and publications:
<http://Plant-Materials.nrcs.usda.gov/txpmc/>

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