



Year 2003

Progress Report of Activities



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James E. 'Bud' Smith Plant Materials Center, Knox City, Texas

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Who We Are

The James E. "Bud" Smith Plant Materials Center (PMC) at Knox City, Texas, was established in 1965 and is one of 26 Centers located throughout the United States. The Center is responsible for developing conservation plants and cultural techniques for use on targeted Major Land Resource Areas (MLRA) in Texas and Oklahoma.

The area served in Texas includes all or portions of nine MLRAs ranging in size from 800,000 acres to over 23 million acres. The area served in southwestern Oklahoma comprises parts of five MLRAs in 27 counties totaling over 16 million acres.

The Center is located approximately 4 miles NW of Knox City, Texas, in the Rolling Red Plains Land Resource Area.

The mission of the Plant Materials Program is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. Plant and technology development objectives of the Knox City PMC include:

- Erosion Control - wind and water
- Range and Pasture Improvement
- Wildlife Habitat Improvement
- Water Quality

Following is a highlight of some of the activities of the Knox City PMC for 2003.

Drought and Seed Supplies

Over the past 7-8 years severe drought has blanket the SW, including the area where the Plant Materials Center is located. Rainfall events have been few and far between with amounts received greatly below normal. In 2003 the Knox City PMC recorded only 14" of rainfall for the year. Normal rainfall for the center is 26". Because of this the Center's primary source of irrigation water, the Seymour Aquifer, has experienced a tremendous drop in water level. In the past our irrigation capacity allowed us to water approximately 240, 300 ft rows. Under our current level of well capacity we are only able to irrigate 40 – 50 rows. Because of low rainfall and diminishing underground water supplies the PMC has had to prioritize its production to make the best use of available water supplies to meet some priority needs.

If you've requested seed or materials and they seem to be nonexistent or in very limited supply bare with us.



At some point in the future we hope to be back up to full production, meeting your resource needs.

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New Select Releases

The Plant Materials Center completed documentation for several new releases. The new **Select Ecotype** releases included little bluestem, sand bluestem, velvet bundleflower, purple prairie clover. Both native grasses and native legumes have characteristics that will make them useful in addressing conservation problems.

Cottle County Germplasm sand bluestem,

Andropogon hallii is a native, perennial, warm-season grass that grows principally on sandhills and in deep sandy soils in the Central Rolling Red Plains and Southern High Plains of Texas and Oklahoma. Sand bluestem replaces big bluestem on sandier soils in western Texas and SW Oklahoma. This grass species can be planted in pure stands or as a component in a seed mix. Possible uses of sand bluestem include CRP or EQIP planting on sandy soils, dune stabilization, herbaceous wind barrier, rangeland improvement, and pasture or hayland plantings. This selection of sand bluestem was originally collected in Cottle County, Texas and has an accession number of 9031498.

OK Select Germplasm little bluestem,

Schizachyrium scoparium, is a native, perennial, warm-season, bunchgrass. Little bluestem is widely distributed throughout the US except Washington, Oregon and California. Little bluestem may be used in pure stands for pasture and hay plantings or as a component in seed mixtures for range seeding. Its forage value is fair to good while young and tender. After heads mature, forage is fair for cattle and horses. As with all native range grasses it must be managed accordingly to avoid overgrazing. Wildlife can utilize the plants and seed for food. The plants provide good ground nesting cover for quail. Little bluestem maybe utilized in filterstrips, field borders, contour buffer strips, and riparian forest buffers for nitrogen and phosphorus uptake, and erosion control. This selection of little bluestem is a composite of 5 accessions from native stands from Caddo, Grady, Jefferson, Stephens and Washita counties of Oklahoma and has the accession number of 9029926.



OK Select little bluestem production field

Hondo Germplasm velvet bundleflower,

Desmanthus velutinus, is a native perennial, warm-season legume. It is native throughout central and west Texas, and is an important component of range sites in these areas. It is valuable as a wildlife food and cover species. Velvet bundleflower may be included in CRP or EQIP plantings, and range seeding mixes. This selection of velvet bundleflower was originally collected near Hondo, Texas, and has a PI number of 477961.



Cuero Germplasm purple prairie clover, *Dalea*

purpurea, is a native perennial, warm-season legume. It is native throughout central and west Texas, and is an important component of range sites in these areas. Purple prairie clover has high quality forage that makes the plant desirable for all classes of livestock and wildlife. Purple prairie clover may be included in CRP or EQIP plantings, and range seeding mixes. This selection of purple prairie clover was originally collected near Cuero, Texas, and has a PI number of 441183.

Up Coming Plant Releases – 3-5 years

Arizona cottontop, *Digitaria californica*, is a native, perennial, warm-season, bunchgrass that is common to the southwestern US from Arizona to Colorado, south to Texas and northern Mexico. Arizona cottontop grows best on gravelly and sandy loam soils. This grass species can be planted in pure stands or as a component in a seed mix. Possible uses of AZ cottontop include CRP or EQIP plantings, and rangeland improvement. Its forage value is good and most palatable when plants are green. It will cure well and provide adequate dry forage for cattle. It must be managed accordingly to avoid overgrazing. Wildlife can utilize the plants for food and cover. Selection PMT-389 Arizona cottontop was placed into the open market for production back in the late 60's. This selection was never formally released. Plans include formally releasing PMT-389 as a select class of certified seed.



Giant sandreed, *Calamovilfa gigantea*, is a native perennial, warm season, rhizomatous grass that is useful in the stabilization and revegetation of sandy soils.

Five accessions were selected and combined because of their similarity and overall rating for vigor, survivability, abilities to spread, and seed production. The five collections composite is currently being increased and will have a new accession number of 9065015.

Parental lines for 9065015 giant sandreed include;

9035710-Dickens Co., TX
9035879-Childress Co., TX
9035810-Wilbarger Co., TX
9042928-Childress Co., TX
9042911-Winkler Co., TX



Giant sandreed initial increase field

Showy menodora, *Menodora longiflora* is a native, warm-season, perennial herb or small shrub. It is native throughout west Texas, and is an important component of range sites in these areas. It is valuable as a wildlife food and cover species. Showy menodora may be included in CRP or EQIP plantings, and range seeding mixes. This selection of showy menodora was originally collected near Brackettville, Texas, and has a PI number of 477967.

Havard panicum, *Panicum havardii* is a tall, warm season perennial grass with an extensive rhizome system. Eleven collections were combined and given the composite number of 9065020. 9065020 is currently undergoing field increase.

Parental lines include;

9049593-Crane Co., TX
9064950-Andrews Co., TX
9049592-Crane Co., TX
9004621-Andrews Co., TX
9003951-Winkler Co., TX
9049541-Crane Co., TX
9049287-Andrews Co., TX
9064880-Ward Co., TX
9064960-Crane Co., TX
9064890-Crane Co., TX
9001480-(Ward Co., Andrews Co., Winkler Co., composite)

Prairie acacia, *Acacia angustissima* is a native perennial, warm-season legume. It is native throughout central and west Texas, and into Oklahoma. Prairie acacia is an important component of range sites in these areas. It is valuable as a wildlife food and cover species. Prairie acacia may be included in CRP or EQIP plantings, and range seeding mixes. This selection of prairie acacia is a combination of 17 collections and has an accession number of 9085672.

Parental lines of 9085672, prairie acacia;

9049624 – Frio Co., TX
9064933 – Bell Co., TX
9064926 – Austin Co., TX
9064917 – Comanche Co., TX
9064928 – Lee Co., TX
9064978 – King Co., TX
9064952 – DeWitt Co., TX
9049620 – Runnels Co., TX
9064965 – Haskell Co., TX
9064970 – Callahan Co., TX
9064972 – Bell Co., TX
9064921 – Taylor Co., TX
9064924 – Grimes Co., TX
9049617 – Crockett Co., TX
9064915 – Hamilton Co., TX
9064922 – Coke Co., TX
9049622 – Schleicher Co., TX