



United States Department of Agriculture
Natural Resources Conservation Service **United States Department of Agriculture**
Natural Resources Conservation Service

2012 ANNUAL TECHNICAL REPORT

JAMES E. "BUD" SMITH PLANT MATERIALS CENTER

Serving Texas, southwestern Oklahoma, eastern New Mexico, southeastern Colorado, and southwestern Kansas



**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
JAMES E. "BUD" SMITH PLANT MATERIALS CENTER**

2012 ANNUAL TECHNICAL REPORT

State Conservationist Advisory Committee

Salvador Salinas, State Conservationist - Texas
Ronald L. Hillard, State Conservationist - Oklahoma
J. Xavier Montoya, State Conservationist - New Mexico
Phyllis Ann Philipps, State Conservationist – Colorado
Eric B. Banks, State Conservationist - Kansas

National Program Leader

John M. Englert, Washington, D. C.

Regional Plant Materials Specialist

Joel L. Douglas, Ft. Worth, Texas

Plant Materials Specialist

Robert D. Ziehr - Texas
Mark A. Janzen - Oklahoma, Kansas, Nebraska

Plant Materials Center Personnel

Gary L. Rea, Manager
Bandon Carr, Soil Conservationist
Randy Kuehler, Biological Science Technician

HISTORY

The Natural Resources Conservation Service/James E. "Bud" Smith Plant Materials Center had its beginning in 1935 in San Antonio, Texas. The San Antonio Nursery was established under the Soil Erosion Service. It later became the Soil Conservation Service (SCS), which is known today as the Natural Resource Conservation Service (NRCS). In the late 50's and early 60's there were two Plant Materials Centers operating through a cooperative enterprise between the Texas Agriculture Experiment Station and the Soil Conservation Service. The Spur, Texas Plant Materials Center was the primary center with the San Antonio Plant Material Center being a sub-center. The Spur Plant Materials Center was located on 48 acres of irrigated land and the San Antonio Sub-Center was located on 30 acres of irrigated land. Seed production from both of the centers was processed at the Big Spring Field Station. It appears that both Plant Materials centers were closed in 1964 and all material moved to Knox City in 1965 when the Knox City Plant Materials Center was establish. Since 1965 all of the seed production has been processed at Knox City. On September 7, 1967, the Knox City Plant Materials Center (PMC) was given the honorary name of James E. "Bud" Smith Plant Materials Center in honor of Bud's dedicated service in early plant science work from 1935 up until 1965. The PMC original long-term lease from Mr. T. R. Campbell was for 60 acres of irrigated land. The current lease is for 137.5 acres of his land.

Past Managers at the NRCS/James E. "Bud" Smith PMC

Dates

Arnold G. Davis	2/1965 to 6/1966
Howard A. Carleton	11/1968 to 5/1969
Jacob C. Garrison	5/1969 to 7/1974
David G. Lorenz	9/1974 to 3/1984
Jon B. Muncrief	1984 to 8/1985
James S. Alderson	2/1986 to 1/1990
Morris J. Houck	6/1990 to 9/2006
Ray T. Cragar	4/2007 to 7/2008
Gary L. Rea Ph. D	10/2008 to present

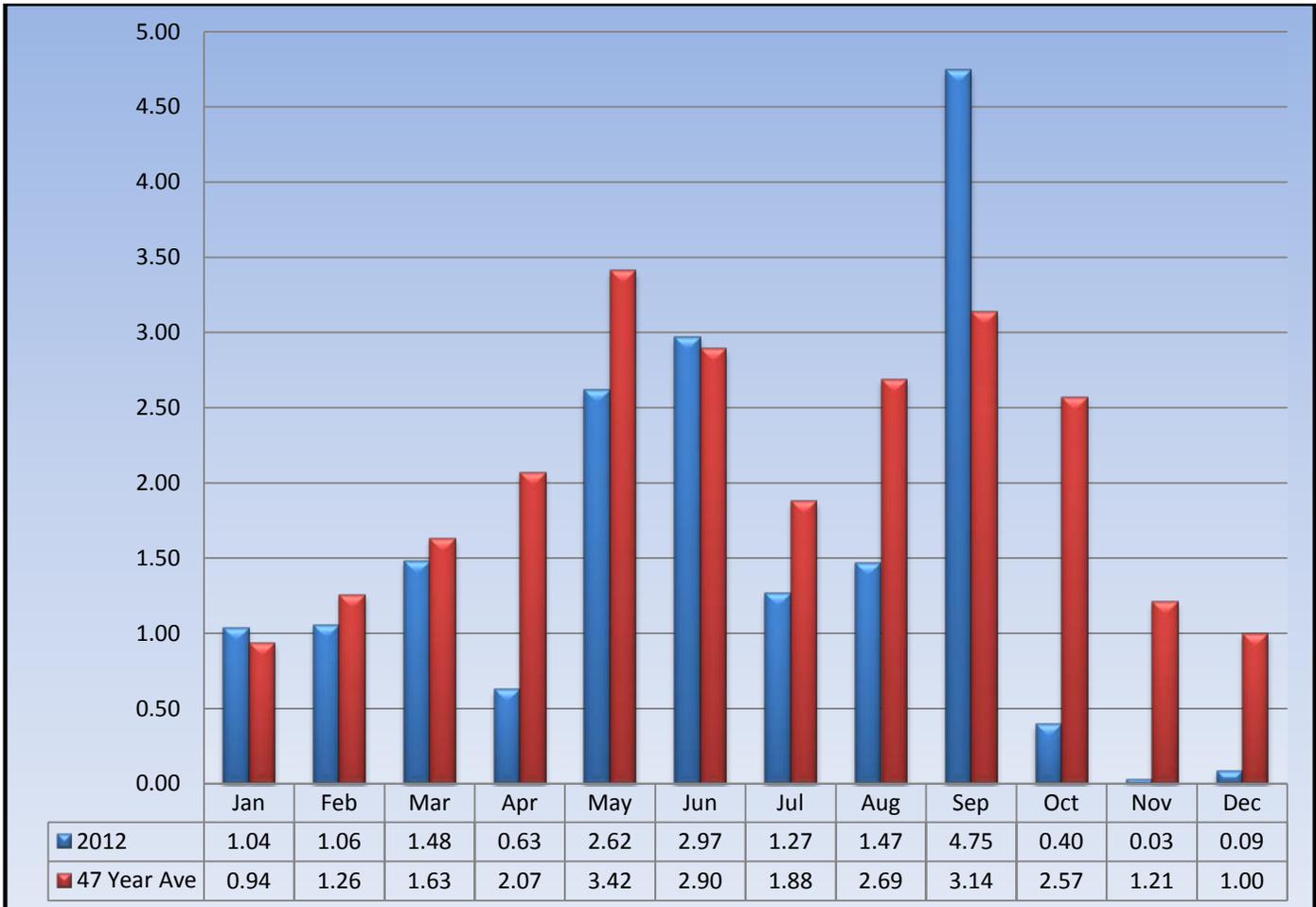
INTRODUCTION

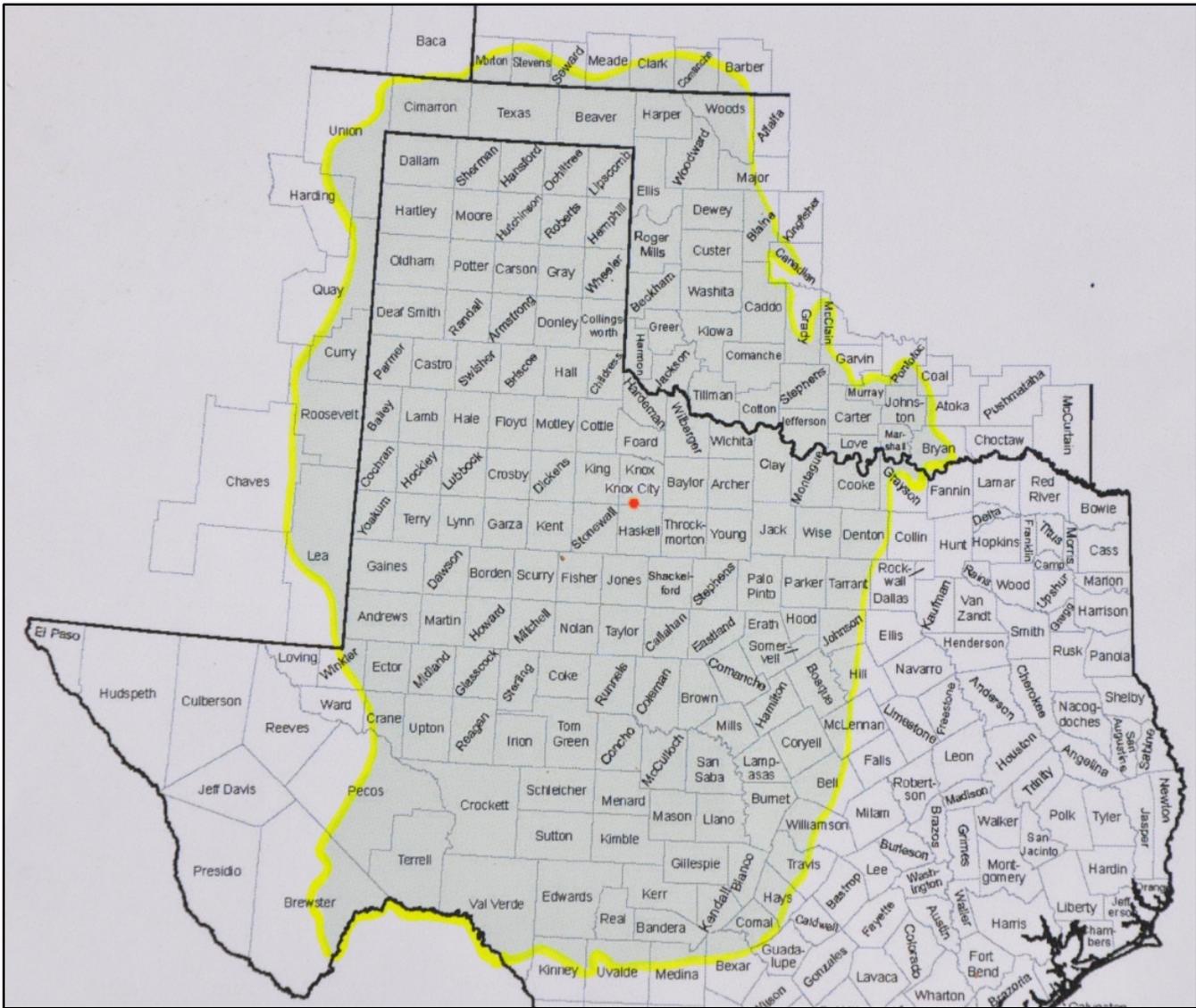
The James E. "Bud" Smith Plant Materials Center is responsible for developing conservation plants and cultural techniques for use on targeted Major Land Resource Area (MLRA) in Texas, Oklahoma, Kansas, Colorado, and New Mexico.

The Plant Materials Center is located approximately 4½ miles NW of Knox City, Texas, in the Rolling Red Plains Land Resource Area. The site is located about 33° north latitude, 100° west longitude and 1500 feet above sea level. Seven shallow irrigation wells supply irrigation water to all fields through an underground pipeline.

Approximately 90 percent of the soil at the PMC is a friable loam or fine sandy loam. Surface soil varies in depth from 10 to 30 inches with sandy clay loam or clay subsoil. The remainder of the soil is slightly heavier, having a fine sandy loam surface soil over clay loam subsoil with a caliche layer between 20 and 36 inches. Water erosion is not usually a problem, but wind erosion poses a constant threat, especially during late winter and spring. On fallow fields, cover crops and tillage practices are applied to control wind erosion.

The PMC has a long-term average of 230 frost-free days in its growing season. Rainfall for 2012 was recorded at 17.81 inches, which is significantly lower than the 47-yr average of 24.84 inches. Precipitation for the Center is mainly received in the form of spring, summer and fall rain showers. Snowfalls during winter were few and contributed minor amounts to total precipitation.





SERVICE AREA

The service area of the NRCS James E. "Bud" Smith Plant Materials Center includes a large portion of Texas, southwestern Oklahoma, and a portion of Kansas, Colorado, and New Mexico. The work here is coordinated with the work done at other Plant Materials Centers in Texas and throughout the United States. The shady portions of the map below indicate the Service area.

JAMES E. "BUD" SMITH PLANT MATERIALS CENTER LONG RANGE PLAN

I. Introduction

The mission of the Plant Materials Program is to develop and deliver plant science technology to meet customer and resource needs. The purpose of the Plant Materials Program is to carry out specialized activities in resource conservation, as part of the overall program of the Natural Resources Conservation Service. It is the responsibility of the Plant Materials Center to: 1.) assemble, test, and release plant materials for conservation use, 2.) determine techniques for the successful use and management of conservation species, 3.) facilitate the commercial increase of conservation plant species, 4.) provide for the development and transfer of state of the art applied science technology.

The PMC Long Range Plan (LRP) is used to identify, guide, and direct PMC operation toward solving high-priority resource problems identified in the State(s) Plant Materials LRP. **The James E. "Bud" Smith PMC is directed by needs identified in the Long Range Plans of Texas, Oklahoma, Kansas, Colorado, and New Mexico. It is consistent with goals and objectives identified in the NRCS Strategic Plan.**

II. Long Range Plan Development

This Long Range Plan (LRP) was developed in accordance with the revised National Plant Materials Manual, Part 540.22. This plan is intended to be used as a guide for directing plant materials center activities within the state of Texas, portions of Oklahoma, Kansas, Colorado, and New Mexico.

The Plant Materials Center Technical Advisory Committee(s) is responsible for identifying customers, resource, and program needs. The Technical Advisory Committee consists of representatives from NRCS and other federal and state agencies, private industry, and universities. Advisory members may have an interest due to financial contributions made to the center.

Needs were categorized by the NRCS Goals and Objectives as listed in the revised National Plant Materials Manual, Exhibit 539.1, NRCS Goals and Objectives.

The Technical Advisory Committee recommends studies needed at the center to meet identified concerns. Specific study areas and special concerns are defined by the Technical Advisory Committee and reviewed by the State Conservationist Advisory Committee. Projects budgeted are incorporated into the Center's Business Plan and Workload Analysis.

General Description of the Service Area

Climate - USDA Plant Hardiness Zones 5b through 8b are within the area served. Rainfall is quite varied both in annual amount and in seasonal distribution, but predominately occurs in the form of rainfall. Annual precipitation averages of individual climatological stations range from about 12 to 36 inches.

Major Land Resource Areas - Included in the service area is all or portions of eighteen major land resource areas. MLRAs include the following:

67B – Central High Plains, Southern Part
42 – Trans-Pecos
70A – Canadian River Plains and Valleys
70B – Upper Pecos River Valley
77A, B, C, D, E - Southern High Plains
78A, B, C, D - Central Rolling Red Plains
80A - Central Rolling Red Prairies
80B - North Texas Central Prairies
81A, B, C, D - Edwards Plateau
82A, B - Texas Central Basin
83A – Northern Rio Grande Plain
83B – Western Rio Grande Plain
84A - Cross Timbers
84B - West Cross Timbers
84C - East Cross Timbers
85 - Grand Prairie
86A - Northern Texas Blackland Prairies
87B – Texas Claypan Area, Northern Part

A detailed description of MLRAs, land use, and climate may be found in the reference "Land Resource Regions and Major Land Resource Areas of The United States", Agricultural Handbook 296.

III. NRCS Objectives, Needs, Recommended Actions

The plant material needs of the James E. "Bud" Smith PMC fall into five categories according to NRCS Objectives:

NRCS Objective: 2.1 Healthy and productive cropland sustaining U.S. agriculture and the environment.

A. Plant selection and cultural technique development for stabilization of soils that have high erosion potential.

Problem:

Plant materials are needed that have the innate ability to establish and maintain themselves on sandy soils and control wind erosion. Three major land resource areas in Oklahoma and sixteen MLRA's in Texas are affected, resulting in a total of 4.7 million acres needing attention.

Objective:

To identify, collect, develop technology, and cooperatively release plant selections and techniques for the stabilization of sandy soils with high erosion potential.

Procedure:

Previous released species, assemblies under evaluation and cultural studies will be evaluated at the center and at selected off-center sites.

Previous releases:

'Mason' sandhill lovegrass

'Alamo' switchgrass
'Rainbow' wild plum
'Lometa' Indiangrass
'Haskell' sideoats grama
'Sabine' Illinois bundleflower
'Comanche' partridge pea
'Van Horn' green sprangletop
'Earl' big bluestem
Potter County Germplasm spike dropseed
Borden County Germplasm sand dropseed
Cottle County Germplasm sand bluestem
OK Select Germplasm little bluestem
Hondo Germplasm velvet bundleflower
Cuero Germplasm purple prairie clover
Plains Germplasm prairie acacia

Current plant science studies:
Evaluation of Plains Germplasm prairie acacia
Evaluation of Havard panicum

B. Woody species for wind erosion control and wildlife habitat.

Problem:

Adapted woody plant materials that are easily established, fast growing and long-lived are needed for windbreaks. In addition to erosion control, windbreaks will provide wildlife habitat and enhance beautification of the landscape. Nine major land resource areas in Texas and five in Oklahoma are involved.

Objective:

To identify, collect, develop technology, and cooperatively release plant selections and techniques for use in windbreak planting and design.

Procedure:

Previous released species, assemblies under evaluation and cultural studies will be evaluated at the center and at selected off-center sites.

Previous releases:

'Rainbow' wild plum
'Yellow Puff' littleleaf leadtree
'Boomer' bur oak
Kerr Germplasm Wright pavonia

Current plant science studies:

Currently no studies

NRCS Objective: 2.2 Healthy watersheds providing clean and abundant water supplies for people and environment.

A. Ground cover vegetation for critically eroding areas to reduce soil loss and improve water quality.

Problem:

There is a need for plant materials and techniques for stabilization of critically eroding areas. All major land resource areas in both states totaling approximately 2.5 million acres are affected need vegetative treatment.

Objective:

To identify, collect, develop techniques, and cooperatively release adapted vegetation for stabilization of critically eroding areas.

Procedure:

Previous released species, assemblies under evaluation and cultural studies will be evaluated at the center and at selected off-center sites.

Previous releases:

'Texoka' buffalograss
'Alamo' switchgrass
'Aztec' Maximilian sunflower
'Rainbow' wild plum
'Saltalk' alkali sacaton
'Haskell' sideoats grama
'Sabine' Illinois bundleflower
'Comanche' partridge pea
'Van Horn' green sprangletop
'Overton R18' rose clover
'Earl' big bluestem
Potter County Germplasm spike dropseed
Borden County Germplasm sand dropseed
Duck Creek Germplasm Texas dropseed
Cottle County Germplasm sand bluestem
Hondo Germplasm velvet bundleflower
Cuero Germplasm purple prairie clover
Plains Germplasm prairie acacia

Current plant science studies:

Evaluation of Plains Germplasm prairie acacia
Evaluation of Havard panicum
Evaluation of purpletop

B. Plant selection and cultural techniques for saline and/or alkaline soil conditions.

Problem:

There is a need for adapted plant materials, which are tolerant of saline and/or alkaline soil conditions. All major land resource areas in Texas and four in Oklahoma, totaling more than 1.2 million acres, are affected by different levels of salinity or alkalinity that are either naturally occurring or induced by oil field related activities. (See respective long-range Plant Materials Programs - Oklahoma and Texas).

Objectives:

To identify tolerant materials and techniques for saline or alkaline sites by:

- testing known cultivars for their adaptability.
- collect and evaluate of plants from sites.
- evaluating techniques needed to enhance establishment.
- release adapted plants and techniques.

Procedure:

Previous released species, assemblies under evaluation and cultural studies will be evaluated at the center and at selected off-center sites.

Previous Releases:

- 'Selection 75' kleingrass
- 'Alamo' switchgrass
- 'Aztec' Maximilian sunflower
- 'Lometa' Indiangrass
- 'Saltalk' alkali sacaton
- 'Haskell' sideoats grama
- Potter County Germplasm spike dropseed
- Borden County Germplasm sand dropseed
- Duck Creek Germplasm Texas dropseed

Current plant science studies:

Evaluation of Havard panicum

NRCS Objective: 2.3 Healthy and productive grazing land sustaining U.S. agriculture and the environment.

A. Species selection and cultural technique development needed for the enhancement of water quality, improvement of range and pastureland and to promote food and cover for wildlife.

Problem:

There is a need for commercially available adapted plant materials indigenous to the climates of Texas, Oklahoma, Kansas, Colorado, and New Mexico. All major land resource areas in these states need treatment with locally adapted plants.

Adapted species are needed to help improve water quality, provide forage for wildlife during critical periods and provide food/cover for wildlife.

Objective:

To identify, collect, develop, and cooperatively release grasses, forbs, legumes, and woody species adapted to Oklahoma and Texas.

Procedure:

Previous released species, assemblies under evaluation and cultural studies will be evaluated at the center and at selected off-center sites.

Previous releases:

'Selection 75' kleingrass
'Mason' sandhill lovegrass
'Alamo' switchgrass
'Aztec' Maximilian sunflower
'T-587' old world bluestem
'Rainbow' wild plum
'Lometa' Yellow Indiangrass
'Yellow Puff' littleleaf leadtree
'Saltalk' alkali sacaton
'Haskell' sideoats grama
'Sabine' Illinois bundleflower
'Comanche' partridge pea
'Plateau' awnless bushsunflower
'Van Horn' green sprangletop
'Earl' big bluestem
Kerr Germplasm Wright's pavonia
San Marcos Germplasm eastern gamagrass
Cottle County Germplasm sand bluestem
OK Select Germplasm little bluestem
Hondo Germplasm velvet bundleflower
Cuero Germplasm purple prairie clover
Plains Germplasm prairie acacia

Current plant science studies:

Evaluation of sweet Indianmallow
Evaluation of purpletop

NRCS Objective: 2.4 Healthy and productive wetlands sustaining watersheds and wildlife.

A. Wetland vegetation selection and cultural techniques for water quality improvement.

Problem:

There is a need for plant materials and techniques that are adapted for water quality use. All major land resource areas in both states are affected and need adapted species. Urban and rural wastewater treatments, streambank stabilization and drinking water quality improvement are major concerns in the area.

Objective:

To identify, collect, develop techniques and cooperatively release adapted vegetation for water quality improvement.

Procedure:

Previous released species, assemblies under evaluation and cultural studies will be evaluated at the center and at selected off-center sites.

Released Plant Materials

'Alamo' switchgrass
'Aztec' Maximilian sunflower
'Rainbow' wild plum
'Haskell' sideoats grama
'Sabine' Illinois bundleflower
'Comanche' partridge pea
'Van Horn' green sprangletop
'Earl' big bluestem
San Marcos Germplasm eastern gamagrass
Plains Germplasm prairie acacia

Current plant science studies:

Evaluation of Plains Germplasm prairie acacia
Technical evaluation of purpletop

NRCS Objective: 2.5 High-quality habitats on private land supporting the Nation's wildlife heritage.

A. Species selection and cultural technique development needed to promote food and cover for wildlife.

Problem:

There is a need for commercially available adapted plant materials indigenous to the major land resources in Texas, Oklahoma, Kansas, Colorado and New Mexico.

Objective:

To identify, collect, develop and cooperatively release grasses, forbs, legumes, and woody species adapted to Texas, Oklahoma, Kansas, Colorado and New Mexico for wildlife.

Procedure:

Previous released species, assemblies under evaluation and cultural studies will be evaluated at the center and selected off-center sites.

Previous released species, assemblies under evaluation and cultural studies will be evaluated at the center and at selected off-center sites.

'Alamo' switchgrass
'Aztec' Maximilian sunflower
'Rainbow' wild plum
'Yellow Puff' littleleaf leadtree
'Sabine' Illinois bundleflower
Hondo Germplasm velvet bundleflower
Cuero Germplasm purple prairie clover
Kerr Germplasm wright pavonia
'Boomer' bur oak
'Plateau' awnless bushsunflower
'Eldorado' Engelmann daisy
Plains Germplasm prairie acacia

Current plant science studies:

Evaluation of Plains Germplasm prairie acacia
Technical evaluation of purpletop

TECHNOLOGY TRANSFER

PUBLICATIONS

Tech Notes:

- Summer-Dormant Tall Fescue Management and Use in Texas. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. November 2011.
- Forage Production, Nutritive Quality and Growth Pattern of Various Warm Season Grasses. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. May 2012.
- Compressed Air Sprayer Calibration. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. July 2012.

Refereed Journal Article:

- Ray L. Noah, James P. Muir, Roger D. Wittie, David H. Kattes, William D. Pitman, Gary L. Rea, and Melinda R. Brakie. Prairie Acacia, Panicked Tick-Clover, and Herbaceous Mimosa Herbage, Nitrogen and Seed Yields, Nutritive Value, and Regional Adaptation. *Agronomy Journal*, Maddison, WI. Volume 104, Issue 104, Issue 2. 2012.
- Ray L. Noah, James P. Muir, Jeffery A. Brady, Roger D. Wittie, David H. Kattes, William D. Pitman, Gary L. Rea, and Melinda R. Brakie. Genotypic and Phenotypic Variability in Three Prairie Acacia Accessions. *Crop Science*, Madison, WI. 52:951-959. 2012.

Reports:

- KCPMC 2011 Annual Tech Report. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. May 2012.
- 2011 Progress Report of Activities. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. November 2011.

Release Brochures:

- Release Brochure for Hondo Germplasm Velvet Bundleflower, *Desmanthus velutinus*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. December 2011.
- Release Brochure for ‘Comanche’ Partridge Pea, *Chamaecrista fasciculata*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. December 2011.
- Release Brochure for ‘Plateau’ Awnless Bushsunflower, *Simsia calva*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. March 2012
- Release Brochure for ‘Sabine’ Illinois Bundleflower, *Desmanthus illinoensis*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. March 2012.
- Release Brochure for ‘Alamo’ Switchgrass, *Panicum virgatum*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. May 2012.
- Release Brochure for ‘Lometa’ Indiangrass, *Sorghastrum nutans*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. May 2012.
- Release Brochure for Cuero Germplasm Purple Prairie Clover, *Dalea purpurea*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. August 2012.
- Release Brochure for ‘Haskell’ Sideoats Grama, *Bouteloua curtipendula*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. August 2012.
- Release Brochure for OK Select Germplasm Little Bluestem, *Schizachyrium scoparium*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. August 2012.
- Release Brochure for ‘Selection 75’ Kleingrass, *Panicum coloratum*. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. August 2012.

Newsletters/ Articles:

- Knox City Knowledge. Winter 2012. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. Volume 3, Issue 1. December 2011.
- Knox City Knowledge. Summer 2012. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. Volume 3, Issue 2. July 2012.

- “What Difference Does It Make Which One I Choose?”. The Reverchon Naturalist, Weatherford, TX. Issue 14, March/April 2012.
- The Importance of Seed Collecting. The Reverchon Naturalist, Weatherford, TX. Issue 15. May/June 2012.

TRAINING SESSIONS

- FFA Range Contest Training. Brandon Carr. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. March 2012.
- FFA Range Contest Training. Brandon Carr. USDA/NRCS James E. “Bud” Smith PMC, Knox City, TX. April 2012.

TOURS

- Knox City 2nd Grade Science Class Tour. Brandon Carr. USDA/NRCS James E. “Bud” Smith PMC. April 2012.

PRESENTATIONS

- East Texas Update on Activities and Plans. Gary Rea. USDA/NRCS James E. “Bud” Smith PMC, Temple, TX. October 2011.
- James E. “Bud” Smith Plant Materials Update on Activities and Plans. Gary Rea. USDA/NRCS James E. “Bud” Smith PMC, Temple, TX. October 2011.
- James E. “Bud” Smith Plant Materials Center Update. Gary Rea. USDA/NRCS James E. “Bud” Smith PMC, Grapevine, TX. February 2012.
- Range and Pasture Planting. Brandon Carr. Texas Farm, Ranch, and Wildlife Expo. Abilene, TX. February 2012.
- Developing Plants and Technology for Conservation. Gary Rea. USDA/NRCS. San Angelo, TX. March 2012.
- Importance of West Texas Agriculture and Importance of Conservation. Gary Rea. Knox City Chamber of Commerce Banquet, Knox City, TX. April 2012.
- Plant Materials Program. Gary Rea and Brandon Carr. Seymour, TX. April 2012.
- Status of James E. “Bud” Smith Plant Materials Program. Gary Rea. USDA/NRCS. Ecological Science Meeting, Junction, TX. July 2012.

STUDIES

The Plant Materials Center staff plan and develop studies to solve problems identified in the PMC's Long-Range Plan. All active studies are listed below with the study number and name and their objectives. Each study is identified in the following pages.

Study Number and Name: 48I187J Evaluation of sweet Indianmallow

Study Objective: Evaluate and release selected accessions of sweet Indianmallow.

Study Number and Name: 48I190S Evaluation of Havard panicum

Study Objective: Evaluation and release of selected accessions of Havard panicum.

Study Number and Name: 48I196S Evaluation of purpletop tridens

Study Objective:Evaluate and release accessions of purpletop for wildlife habitat.

Study Number and Name: TXPMC-T-0901-ICST-Arizona cottontop

Study Objective: Compare Arizona cottontop selections for adaptability.

Study Number and Name: TXPMC-T-0903-BF ICST- Biomass Study

Study Objective: Comparison of Warm Season Perennial Species for Biomass Production.

Study Number and Name: TXPMC-P-0904-RA Evaluation of vine-mesquite

Study Objective: Collection, assembly and evaluation.

Study Number and Name: TXPMC-P-0905-RA Evaluation of Blue Grama

Study Objective: Collection, assembly and evaluation.

Study Number and Name: TXPMC-P-0907-RA Evaluation of Threeflower melic

Study Objective: Collection, assembly and evaluation.

Study Number and Name: TXPMC-P-0908-WL Evaluation of showy menodora

Study Objective: Collection, assembly and evaluation.

Study Number and Name: TXPMC-T-0909-PA ICST-Eastern Gamagrass

Study Objective: Replicated Study of Four Releases of Eastern Gamagrass

Study Number and Name: TXPMC-P-1001-RA Evaluate Original Accessions of Prairie Acacia for Possible Tested or Cultivar Release

Study Objective: Select superior line from bulk used in Plains Germplasm

Study Number and Name: TXPMC-T-1002-RA Sampling Protocol for Established and Newly Planted Perennial Grasses for Vegetative Barriers

Study Objective: Collect raw measurements on various perennial grasses used as vegetative barriers in order to develop a conservation planning tool.

Study Number and Name: TXPMC-P-1003-PA Initial Evaluation of Texas Cupgrass (*Eriochloa sericea*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1004-WL Initial Evaluation of Prairie Bundleflower (*Desmanthus leptolobus*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1005-PA Initial Evaluation of Western Wheatgrass (*Pascopyrum smithii*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1006-RA Initial Evaluation of Pink Smartweed (*Polygonum pensylvanicum*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1007-CR Initial Evaluation of Knotgrass (*Paspalum distichum*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-T-1101-PA Evaluating Warm Season Grasses for Winter Stockpiling

Study Objective: Evaluate warm season grasses by nutrient quality, forage production, and grazing management through winter months

Study Number and Name: TXPMC-P-1102-RA Initial Evaluation of Roundhead lespedeza (*Lespedeza capitata*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1103-PA Initial Evaluation of Switchgrass (*Panicum virgatum*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1104-PA Initial Evaluation of Plains Lovegrass (*Eragrostis intermedia*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1105-PA Initial Evaluation of Hall's Panicum (*Panicum hallii*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1106-RA Initial Evaluation of Scurfpea (*Psoralea tenuiflora*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-P-1107-WL Initial Evaluation of Narrow Leaf Globe Mallow (*Spaeralcea angustifolia*)

Study Objective: Collection, assembly and evaluation

Study Number and Name: TXPMC-T-1108-PA Germination and Emergence of Three Cultivars of Switchgrass

Study Objective: Compare the emergence and germination of three common switchgrass cultivars to determine if seed production environment contribute to seed quality

Study Number and Name: TXPMC-T-1109-RA Seed Count

Study Objective: Evaluate and determine seed counts for all inventory and new production at the PMC

Study Number and Name: TXPMC-T-1110-RA North Texas Ecotype Project

Study Objective: A cooperative agreement with North Texas Ecotype (South Texas Natives) to collect and evaluate materials for possible releases.

Study Number and Name: TXPMC-T-1201-CP Winter Cover Crop Demonstration Following Irrigated Cotton

Study Objective: Demonstrate differences in farming techniques by comparing cover crop, monoculture, and conventional tillage in an irrigated cotton operation. Goal is to show how to improve soil health in farming operations in the PMC service area.

Study Number and Name: TXPMC-T-1202-CP Winter Cover Crop Demonstration Following Dryland Cotton

Study Objective: Demonstrate differences in farming techniques by comparing cover crop, monoculture, and conventional tillage in a dryland cotton operation. Goal is to show how to improve soil health in farming operations in the PMC service area.

Study Number and Name: TXPMC-T-1203- CP Summer Cover Crop Demonstration Following Limited Irrigated Wheat

Study Objective: Demonstrate differences in farming techniques by comparing cover crop, monoculture, and conventional tillage in a wheat operation. Goal is to show how to improve soil health in farming operations in the PMC service area.

Study No. : 481187J - Evaluation of *Abutilon fruticosum*, sweet Indianmallow

Objective: Evaluate an assembly of sweet Indianmallow and select a superior plant to primarily enhance water quality, for improvement of range and pastureland, and to promote food and cover for wildlife.

Evaluation Factors: Evaluate plants for emergence, survival, vigor, stand, early bloom, freeze recovery and drought tolerance.

Progress or Status: Thirteen accessions survived in the greenhouse and were transplanted in June of 2009. Plants were evaluated by survival, maturity, flower color, and plant height. Evaluations were made beginning in the spring and continuing throughout the growing season until frost. Seed production was low due to limited moisture. The following accessions will continue to be evaluated for seed production, harvestability, germination, survival.

Entry	Accession	County (TX)
1	9049561	Williamson
2	9049578	Schleicher
3	9049534	Williamson
4	9049630	Williamson
5	9049631	Caldwell
6	9064870	Bell
7	9064878	Coryell
8	9049589	Real
9	9064853	Bell
10	9064883	Gonzales
11	9049560	Parker
12	9049539	Caldwell
13	9064859	Coleman

Remarks: Transplanted on 6/3/2009 in B-1 Block

Figure 1 Plot Layout of Sweet Indian Mallow Accessions

								East							
		301	302	303	304	305	306	307	308	309	310	311	312	313	
North		213	212	211	210	209	208	207	206	205	204	203	202	201	South
		101	102	103	104	105	106	107	108	109	110	111	112	113	
								West							

Accession	County (TX)	Survival			% Stand			Height			Maturity			Flower Color			Germ %	Greenup	
		2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2011	2011	2012
9049561	Williamson	6	6	7	60%	60%	70%	33	25	27	L	L	M	Orange	Orange	Orange		5/15/2011	5/2/2012
9049561	Williamson	10	10	8	100%	100%	80%	39	26	28	E	E	M	Orange/Red	Orange/Red	Orange/Red	5.00%	5/15/2011	5/2/2012
9049561	Williamson	7	7	4	70%	70%	40%	34	22	20	E	E	E	Orange/Red	Orange/Red	Orange		5/15/2011	5/2/2012
9049578	Schleicher	5	5	8	50%	50%	80%	32	30	34	L	L	M	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9049578	Schleicher	8	8	1	80%	80%	10%	44	32	29	M	M	L	Yellow	Yellow	Yellow	3.67%	5/15/2011	5/2/2012
9049578	Schleicher	1	1	4	10%	10%	40%	34	28	27	L	L	L	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9049534	Williamson	7	7	8	70%	70%	80%	34	30	28	E	E	E	Orange	Orange	Orange		5/15/2011	5/2/2012
9049534	Williamson	7	7	7	70%	70%	70%	37	28	30	E	E	M	Orange/Red	Orange/Red	Orange/Red	2.00%	5/15/2011	5/2/2012
9049534	Williamson	6	6	4	60%	60%	40%	30	26	24	M	M	E	Orange	Orange	Orange/Red		5/15/2011	5/2/2012
9049630	Williamson	6	6	10	60%	60%	100%	33	24	28	E	E	M	Orange/Red	Orange/Red	Orange/Red		5/15/2011	5/2/2012
9049630	Williamson	10	10	8	100%	100%	80%	39	25	25	E	E	E	Orange/Red	Orange/Red	Orange	4.67%	5/15/2011	5/2/2012
9049630	Williamson	4	4	9	40%	40%	90%	42	24	25	M	M	E	Orange	Orange	Orange		5/15/2011	5/2/2012
9049631	Caldwell	7	7	8	70%	70%	80%	40	26	27	E	E	E	Orange	Orange	Orange/Red		5/15/2011	5/2/2012
9049631	Caldwell	8	8	6	80%	80%	60%	41	25	26	M	M	E	Orange/Red	Orange/Red	Orange	12.33%	5/15/2011	5/2/2012
9049631	Caldwell	5	5	3	50%	50%	30%	38	28	25	E	E	E	Orange/Red	Orange/Red	Orange		5/15/2011	5/2/2012
9064870	Bell	6	6	8	60%	60%	80%	33	28	29	E	E	E	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9064870	Bell	4	4	4	40%	40%	40%	40	30	32	M	M	M	Orange	Orange	Orange	4.00%	5/15/2011	5/2/2012
9064870	Bell	7	7	7	70%	70%	70%	38	29	31	E	E	E	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9064878	Coryell	7	7	5	70%	70%	50%	39	36	39	E	E	E	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9064878	Coryell	4	4	5	40%	40%	50%	40	38	32	M	M	E	Orange/Red	Orange/Red	Orange	4.67%	5/15/2011	5/2/2012
9064878	Coryell	9	9	8	90%	90%	80%	41	33	35	E	E	M	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9049589	Real	7	7	7	70%	70%	70%	29	28	32	E	E	E	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9049589	Real	5	5	1	50%	50%	10%	43	24	23	M	M	M	Yellow	Yellow	Yellow	8.00%	5/15/2011	5/2/2012
9049589	Real	6	6	9	60%	60%	90%	37	23	28	M	M	E	Orange	Orange	Yellow		5/15/2011	5/2/2012
9064853	Bell	7	7	5	70%	70%	50%	33	26	28	E	E	M	Orange	Orange	Orange		5/15/2011	5/2/2012
9064853	Bell	6	6	4	60%	60%	40%	37	32	25	M	M	M	Yellow	Yellow	Orange/Red	5.67%	5/15/2011	5/2/2012
9064853	Bell	6	6	7	60%	60%	70%	33	30	31	E	E	E	Orange/Red	Orange/Red	Orange		5/15/2011	5/2/2012
9064883	Gonzales	7	7	7	70%	70%	70%	44	28	30	E	E	M	Orange/Red	Orange/Red	Orange		5/15/2011	5/2/2012
9064883	Gonzales	6	6	7	60%	60%	70%	41	26	27	L	L	L	Orange	Orange	Orange	8.33%	5/15/2011	5/2/2012
9064883	Gonzales	5	5	5	50%	50%	50%	36	24	23	M	M	M	Yellow	Yellow	Orange/Red		5/15/2011	5/2/2012
9049560	Parker	10	10	8	100%	100%	80%	41	32	37	E	E	M	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9049560	Parker	4	4	2	40%	40%	20%	36	35	34	M	M	M	Yellow	Yellow	Yellow	8.00%	5/15/2011	5/2/2012
9049560	Parker	6	6	5	60%	60%	50%	38	33	32	L	L	L	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9049539	Caldwell	6	6	7	60%	60%	70%	35	29	27	E	E	E	Orange	Orange	Orange		5/15/2011	5/2/2012
9049539	Caldwell	8	8	10	80%	80%	100%	30	30	33	E	E	E	Orange/Red	Orange/Red	Orange/Red	8.00%	5/15/2011	5/2/2012
9049539	Caldwell	8	8	8	80%	80%	80%	39	28	26	E	E	E	Orange	Orange	Orange		5/15/2011	5/2/2012
9064859	Coleman	10	10	6	100%	100%	60%	32	30	33	L	L	L	Yellow	Yellow	Yellow		5/15/2011	5/2/2012
9064859	Coleman	7	7	7	70%	70%	70%	34	21	34	E	E	M	Yellow	Yellow	Yellow	40.33%	5/15/2011	5/2/2012
9064859	Coleman	5	5	7	50%	50%	70%	36	28	24	L	L	L	Orange	Orange	Orange		5/15/2011	5/2/2012

Study No. : 481190S - Evaluation of *Panicum havardii*, Havard panicum

Objective: To evaluate an assembly of Havard panicum and select a superior plant to primarily aid in cultural techniques for saline and/or alkaline soil conditions and for stabilizing sandy soils that have high erosion potential.

Evaluation Factors: Evaluate for stand, early-stage of bloom, vigor, and freeze recovery.

Progress or Status: Evaluations began in the spring of 2012 and continued throughout the growing season until frost. The table below shows data collected for each individual line. Evaluations will be conducted again in 2013. Seed will be collected, cleaned and germinations will be conducted. Three to five lines will be chosen based on trait data collected for testing in a replicated study. This is a composite of 11 accessions that was given the accession #9065020. The original increase of these accessions was contaminated with switchgrass.

Figure 2 Havard's Panicum Field Map

6	B							B	6
5	B			204	1003	1001	902	B	5
4	B	703	704	801	802	804	901	B	4
3	B	702	701	604	602	504	503	B	3
2	B	202	302	401	402	404	502	B	2
1	B	201	102					B	1

Accn. No	Common Name	R/R	Greenup		50% Greenup		Survival		% Stand		Vigor		Height		Maturity		Seed Production		Seed Weight
			2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	
102	Havard's Panicum	17/2	3/12	3/1	3/22	3/14	5	9	50%	90%	7	n/a	48	57	MID	LATE	6	-	GREEN
201	Havard's Panicum	17/1	3/12	3/1	3/22	3/14	7	10	70%	100%	7	n/a	19	51	MID	MID	3	5	4.826
202	Havard's Panicum	18/1	3/12	3/1	3/22	3/14	7	9	70%	90%	7	n/a	25	48	MID	MID	3	7	7.401
302	Havard's Panicum	18/2	3/12	3/1	3/22	3/14	8	10	80%	100%	6	n/a	30	52	MID	MID	4	3	2.119
401	Havard's Panicum	18/3	3/12	3/1	3/22	3/14	7	9	70%	90%	7	n/a	23	51	MID	MID	1	2	1.035
402	Havard's Panicum	18/4	3/12	3/1	3/22	3/14	6	8	60%	80%	5	n/a	29	45	EARLY	MID	3	1	0.338
404	Havard's Panicum	18/5	3/12	3/1	3/22	3/14	7	7	70%	70%	5	n/a	40	54	MID	EARLY	2	-	SHATTERED
502	Havard's Panicum	18/6	3/12	3/1	3/22	3/14	9	9	90%	90%	6	n/a	30	43	MID	MID	4	3	2.159
503	Havard's Panicum	19/6	3/12	3/1	3/22	3/14	8	7	80%	70%	6	n/a	36	58	EARLY	MID	5	1	0.643
504	Havard's Panicum	19/5	3/12	3/1	3/22	3/14	8	8	80%	80%	6	n/a	27	52	MID	MID	2	2	1.969
602	Havard's Panicum	19/4	3/12	3/1	3/22	3/14	8	8	80%	80%	6	n/a	30	61	MID	MID	4	4	3.354
604	Havard's Panicum	19/3	3/12	3/1	3/22	3/14	8	7	80%	70%	7	n/a	25	59	MID	MID	6	1	0.754
701	Havard's Panicum	19/2	3/12	3/1	3/22	3/14	9	10	90%	100%	5	n/a	36	54	MID	EARLY	1	-	SHATTERED
702	Havard's Panicum	19/1	3/12	3/1	3/22	3/14	8	10	80%	100%	7	n/a	27	52	EARLY	MID	2	3	2.523
703	Havard's Panicum	20/1	3/12	3/1	3/22	3/14	9	9	90%	90%	7	n/a	30	52	MID	MID	x	3	2.418
704	Havard's Panicum	20/2	3/12	3/1	3/22	3/14	9	8	90%	80%	6	n/a	31	51	EARLY	EARLY	3	-	SHATTERED
801	Havard's Panicum	20/3	3/12	3/1	3/22	3/14	8	9	80%	90%	7	n/a	28	61	MID	EARLY	3	-	SHATTERED
802	Havard's Panicum	20/4	3/12	3/1	3/22	3/14	9	10	90%	100%	7	n/a	22	52	MID	MID	1	1	0.684
804	Havard's Panicum	20/5	3/12	3/1	3/22	3/14	7	9	70%	90%	6	n/a	27	54	MID	MID	4	1	0.853
901	Havard's Panicum	20/6	3/12	3/1	3/22	3/14	9	10	90%	100%	6	n/a	27	51	MID	MID	3	1	0.207
902	Havard's Panicum	21/6	3/12	3/1	3/22	3/14	8	10	80%	100%	7	n/a	24	51	EARLY	MID	5	3	2.458
1001	Havard's Panicum	21/5	3/12	3/1	3/22	3/14	9	10	90%	100%	7	n/a	27	49	EARLY	MID	4	4	3.123
1003	Havard's Panicum	21/4	3/12	3/1	3/22	3/14	7	7	70%	70%	5	n/a	26	61	MID	MID	1	1	0.581
204	Havard's Panicum	21/3	3/12	3/1	3/22	3/14	9	8	90%	80%	7	n/a	44	62	EARLY	EARLY	5	-	SHATTERED

Study No. : 481196S - Evaluation of *Tridens flavus*, purpletop

Objective: Evaluate for use in water quality improvement, vegetative filter strips and re-vegetation of critically eroded areas. Purpletop is frequently found in open woods and on roadsides in Pineywoods and Post Oak Savannahs in Texas. It grows in other parts of Texas, such as in the Gulf Prairies and Marshes, Blackland Prairies, Cross Timbers and Prairies, Edwards Plateau, Rolling and High Plains, but not as frequent.

Evaluation Factors: The plantings will be evaluated for early green up, uniform growth, % stand, vigor, and date of maturity.

Progress or Status: Purpletop *Tridens flavus* (L.) Hitchc. Initial evaluations early in the spring showed that many plots had died and the plants had failed to produce viable seed. Data had showed that each year, survival decreased with no new seed production. It was determined that a plant release would not come from the accessions being evaluated in this study. The study will be closed and seed inventory will be stored in cold storage.

These are seed collections with their accession numbers from the counties in which they originated.

9085630 – Burleson Co., Texas
9065036 – Mills Co., Texas
9085627 – Brazos Co., Texas
9085626 – Hunt Co., Texas
9085656 – Murray Co., Oklahoma
9085633 – Panola Co., Texas
9085639 – Grayson Co., Texas
9065048 – Hunt Co., Texas
9065046 – Limestone Co., Texas
9065003 – Montague Co., Texas
9065047 – Kaufman Co., Texas
9085628 – Brazos Co., Texas

9085644 – Taylor Co., Texas
9065032 – Brazos Co., Texas
9065033 – Hemphill Co., Texas
9065039 – Burnet Co., Texas
9085638 – Grayson Co., Texas
9085645 – Lampasas Co., Texas
9085636 – Parker Co., Texas
9064986 – Gonzales Co., Texas
9085637 – Johnson Co., Texas
9085635 – Nacogdoches Co., Texas
9085634 – Montague Co., Texas
9065038 – Milam Co., Texas

R/R	Accession	Green Up			Plant Counts			Maturity			Vigor			% Stand			Height			Seed Production		
		2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
1/21	9064986	7	7	N/A	8	8	2	L	N/A	N/A	6	N/A	N/A	53.33	53%	13%	51	N/A	42	6	N/A	N/A
2/9	9064986	8	8	N/A	10	10	5	L	N/A	N/A	6	N/A	N/A	66.67	67%	33%	48	N/A	40	5	N/A	N/A
3/15	9064986	7	7	N/A	9	5	8	L	N/A	N/A	5	N/A	N/A	60	33%	53%	52	N/A	45	6	N/A	N/A
1/11	9065003	6	6	N/A	8	7	6	E	N/A	N/A	6	N/A	N/A	53.33	47%	40%	53	N/A	36	6	N/A	N/A
2/12	9065003	1	1	N/A	2	6	3	E	N/A	N/A	5	N/A	N/A	13.33	40%	20%	50	N/A	27	6	N/A	N/A
3/22	9065003	8	8	N/A	10	6	2	M	N/A	N/A	5	N/A	N/A	66.67	40%	13%	54	N/A	34	5	N/A	N/A
1/15	9065032	8	8	N/A	10	6	1	L	N/A	N/A	5	N/A	N/A	66.67	40%	7%	46	N/A	41	5	N/A	N/A
2/18	9065032	8	8	N/A	11	8	5	M	N/A	N/A	6	N/A	N/A	73.33	53%	33%	48	N/A	43	4	N/A	N/A
3/23	9065032	6	6	N/A	8	12	2	M	N/A	N/A	5	N/A	N/A	53.33	80%	13%	47	N/A	33	4	N/A	N/A
1/16	9065033	8	8	N/A	10	6	0	E	N/A	N/A	6	N/A	N/A	66.67	40%	0%	50	N/A		4	N/A	N/A
2/19	9065033	7	7	N/A	9	8	2	E	N/A	N/A	5	N/A	N/A	60	53%	13%	49	N/A	39	5	N/A	N/A
3/8	9065033	8	8	N/A	10	8	1	M	N/A	N/A	5	N/A	N/A	66.67	53%	7%	48	N/A	27	6	N/A	N/A
1/3	9065036	9	9	N/A	11	11	1	E	N/A	N/A	7	N/A	N/A	73.33	73%	7%	52	N/A	40	9	N/A	N/A
2/20	9065036	6	6	N/A	8	5	8	M	N/A	N/A	6	N/A	N/A	53.33	33%	53%	50	N/A	50	8	N/A	N/A
3/9	9065036	8	8	N/A	11	8	5	E	N/A	N/A	7	N/A	N/A	73.33	53%	33%	49	N/A	44	6	N/A	N/A
1/25	9065038	5	5	N/A	6	10	0	E	N/A	N/A	6	N/A	N/A	40	67%	0%	51	N/A		5	N/A	N/A
2/6	9065038	8	8	N/A	10	8	1	M	N/A	N/A	5	N/A	N/A	66.67	53%	7%	53	N/A	22	5	N/A	N/A
3/13	9065038	5	5	N/A	7	12	5	M	N/A	N/A	4	N/A	N/A	46.67	80%	33%	50	N/A	35	7	N/A	N/A
1/17	9065039	8	8	N/A	10	8	1	E	N/A	N/A	7	N/A	N/A	66.67	53%	7%	53	N/A	41	5	N/A	N/A
2/25	9065039	6	6	N/A	8	6	3	E	N/A	N/A	5	N/A	N/A	53.33	40%	20%	53	N/A	40	8	N/A	N/A
3/16	9065039	7	7	N/A	9	7	2	E	N/A	N/A	8	N/A	N/A	60	47%	13%	51	N/A	40	4	N/A	N/A
1/10	9065046	6	6	N/A	7	6	5	MS	N/A	N/A	5	N/A	N/A	46.67	40%	33%	55	N/A	50	5	N/A	N/A
2/7	9065046	8	8	N/A	10	7	1	E	N/A	N/A	6	N/A	N/A	66.67	47%	7%	56	N/A	37	6	N/A	N/A
3/4	9065046	8	8	N/A	10	6	3	M	N/A	N/A	5	N/A	N/A	66.67	40%	20%	58	N/A	37	6	N/A	N/A
1/12	9065047	6	6	N/A	8	8	0	E	N/A	N/A	5	N/A	N/A	53.33	53%	0%	51	N/A		5	N/A	N/A
2/15	9065047	5	5	N/A	8	8	1	M	N/A	N/A	5	N/A	N/A	53.33	53%	7%	55	N/A	27	5	N/A	N/A
3/21	9065047	7	7	N/A	9	8	5	E	N/A	N/A	4	N/A	N/A	60	53%	33%	53	N/A	39	7	N/A	N/A
1/9	9065048	7	7	N/A	9	7	4	E	N/A	N/A	5	N/A	N/A	60	47%	27%	54	N/A	45	7	N/A	N/A
2/11	9065048	5	5	N/A	6	10	1	E	N/A	N/A	4	N/A	N/A	40	67%	7%	52	N/A	36	6	N/A	N/A
3/3	9065048	8	8	N/A	10	9	6	M	N/A	N/A	6	N/A	N/A	66.67	60%	40%	55	N/A	45	6	N/A	N/A
1/5	9085626	8	8	N/A	10	9	4	E	N/A	N/A	4	N/A	N/A	66.67	60%	27%	45	N/A	43	6	N/A	N/A
2/14	9085626	4	4	N/A	5	9	2	M	N/A	N/A	5	N/A	N/A	33.33	60%	13%	48	N/A	38	5	N/A	N/A
3/5	9085626	8	8	N/A	11	9	11	M	N/A	N/A	5	N/A	N/A	73.33	60%	73%	42	N/A	45	6	N/A	N/A
1/4	9085627	9	9	N/A	12	7	2	MS	N/A	N/A	6	N/A	N/A	80	47%	13%	54	N/A	39	7	N/A	N/A
2/24	9085627	8	8	N/A	10	9	7	L	N/A	N/A	7	N/A	N/A	66.67	60%	47%	55	N/A	38	6	N/A	N/A
3/18	9085627	6	6	N/A	8	9	5	L	N/A	N/A	4	N/A	N/A	53.33	60%	33%	51	N/A	40	7	N/A	N/A
1/13	9085628	6	6	N/A	7	7	1	L	N/A	N/A	6	N/A	N/A	46.67	47%	7%	51	N/A	37	6	N/A	N/A
2/23	9085628	6	6	N/A	7	5	6	M	N/A	N/A	6	N/A	N/A	46.67	33%	40%	48	N/A	34	5	N/A	N/A

R/R	Accession	Green Up			Plant Counts			Maturity			Vigor			% Stand			Height			Seed Production		
		2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
3/11	9085628	8	8	N/A	11	9	1	L	N/A	N/A	5	N/A	N/A	73.33	60%	7%	50	N/A	36	8	N/A	N/A
1/2	9085630	7	7	N/A	9	7	5	E	N/A	N/A	6	N/A	N/A	60	47%	33%	44	N/A	47	4	N/A	N/A
2/22	9085630	6	6	N/A	8	8	6	E	N/A	N/A	5	N/A	N/A	53.33	53%	40%	42	N/A	38	4	N/A	N/A
3/7	9085630	7	7	N/A	9	11	8	M	N/A	N/A	5	N/A	N/A	60	73%	53%	45	N/A	45	4	N/A	N/A
1/7	9085633	7	7	N/A	9	8	3	MS	N/A	N/A	4	N/A	N/A	60	53%	20%	48	N/A	47	4	N/A	N/A
2/21	9085633	9	9	N/A	12	8	3	L	N/A	N/A	5	N/A	N/A	80	53%	20%	46	N/A	43	4	N/A	N/A
3/6	9085633	7	7	N/A	9	7	6	M	N/A	N/A	4	N/A	N/A	60	47%	40%	48	N/A	55	5	N/A	N/A
1/24	9085634	8	8	N/A	9	5	1	E	N/A	N/A	6	N/A	N/A	60	33%	7%	45	N/A	40	5	N/A	N/A
2/16	9085634	5	5	N/A	8	6	2	E	N/A	N/A	5	N/A	N/A	53.33	40%	13%	43	N/A	29	4	N/A	N/A
3/25	9085634	8	8	N/A	10	10	6	M	N/A	N/A	5	N/A	N/A	66.67	67%	40%	40	N/A	34	3	N/A	N/A
1/23	9085635	9	9	N/A	11	6	0	L	N/A	N/A	6	N/A	N/A	73.33	40%	0%	52	N/A		6	N/A	N/A
2/13	9085635	1	1	N/A	2	6	5	M	N/A	N/A	4	N/A	N/A	13.33	40%	33%	50	N/A	32	5	N/A	N/A
3/20	9085635	8	8	N/A	10	9	2	M	N/A	N/A	6	N/A	N/A	66.67	60%	13%	55	N/A	36	6	N/A	N/A
1/20	9085636	9	9	N/A	12	8	1	E	N/A	N/A	7	N/A	N/A	80	53%	7%	54	N/A	41	7	N/A	N/A
2/3	9085636	8	8	N/A	10	7	4	E	N/A	N/A	7	N/A	N/A	66.67	47%	27%	56	N/A	40	7	N/A	N/A
3/14	9085636	8	8	N/A	10	9	6	E	N/A	N/A	4	N/A	N/A	66.67	60%	40%	54	N/A	38	4	N/A	N/A
1/22	9085637	7	7	N/A	8	7	0	M	N/A	N/A	5	N/A	N/A	53.33	47%	0%	53	N/A		6	N/A	N/A
2/17	9085637	5	5	N/A	7	6	4	M	N/A	N/A	5	N/A	N/A	46.67	40%	27%	50	N/A	22	5	N/A	N/A
3/12	9085637	4	4	N/A	5	11	4	L	N/A	N/A	6	N/A	N/A	33.33	73%	27%	51	N/A	40	5	N/A	N/A
1/18	9085638	8	8	N/A	10	7	0	E	N/A	N/A	7	N/A	N/A	66.67	47%	0%	51	N/A		7	N/A	N/A
2/5	9085638	8	8	N/A	11	8	0	E	N/A	N/A	6	N/A	N/A	73.33	53%	0%	56	N/A		8	N/A	N/A
3/24	9085638	4	4	N/A	5	7	2	M	N/A	N/A	7	N/A	N/A	33.33	47%	13%	55	N/A	34	7	N/A	N/A
1/8	9085639	8	8	N/A	10	5	5	E	N/A	N/A	5	N/A	N/A	66.67	33%	33%	57	N/A	40	6	N/A	N/A
2/2	9085639	8	8	N/A	10	8	1	M	N/A	N/A	5	N/A	N/A	66.67	53%	7%	54	N/A	33	6	N/A	N/A
3/17	9085639	7	7	N/A	9	7	2	L	N/A	N/A	7	N/A	N/A	60	47%	13%	58	N/A	37	5	N/A	N/A
1/14	9085644	5	5	N/A	6	6	1	MS	N/A	N/A	4	N/A	N/A	40	40%	7%	51	N/A	45	4	N/A	N/A
2/4	9085644	8	8	N/A	10	7	3	M	N/A	N/A	4	N/A	N/A	66.67	47%	20%	52	N/A	42	5	N/A	N/A
3/19	9085644	5	5	N/A	6	7	2	M	N/A	N/A	6	N/A	N/A	40	47%	13%	47	N/A	50	4	N/A	N/A
1/19	9085645	8	8	N/A	10	7	1	E	N/A	N/A	7	N/A	N/A	66.67	47%	7%	46	N/A	40	8	N/A	N/A
2/8	9085645	8	8	N/A	10	7	1	E	N/A	N/A	6	N/A	N/A	66.67	47%	7%	42	N/A	40	6	N/A	N/A
3/2	9085645	6	6	N/A	7	7	2	E	N/A	N/A	8	N/A	N/A	46.67	47%	13%	45	N/A	40	5	N/A	N/A
1/6	9085656	9	9	N/A	11	4	8	E	N/A	N/A	4	N/A	N/A	73.33	27%	53%	49	N/A	47	5	N/A	N/A
2/10	9085656	9	9	N/A	12	9	3	M	N/A	N/A	4	N/A	N/A	80	60%	20%	52	N/A	37	5	N/A	N/A
3/10	9085656	6	6	N/A	8	12	4	E	N/A	N/A	5	N/A	N/A	53.33	80%	27%	50	N/A	39	3	N/A	N/A

Study No. : TXPMC-T-0901-ICST- Arizona Cottontop

Objective: Arizona cottontop has multiple releases and accessions, either in commercial production, recently released, or under current development. This study will compare three different accessions from the South Texas PMC, Arizona PMC, and Knox City PMC.

Evaluation Factors: Plants will be evaluated for stand evaluation at the end of season, survival, date dormancy ends (if goes dormant), date of flowering, date of harvest, forage (fresh and dry weight) 1 linear meter clipped from each row, and seed production from each plot.

Progress or Status: Study was established in the spring of 2009. First planting was done with Kincaid plot planter on May 22, 2009. Dry conditions caused multiple skips which were replanted on July 1, 2009. Data was collected through the growing season in 2012 with no added fertilizer or irrigation. The table below shows the biomass and seed production for the three releases over all years of the study.

			North			
	Loetta AZPMC		PMT-389 KCPMC		La Salle STXPMC	Loetta AZPMC
	PMT-389 KCPMC		La Salle STXPMC		Loetta AZPMC	PMT-389 KCPMC
	La Salle STXPMC		Loetta AZPMC		PMT-389 KCPMC	La Salle STXPMC
	Rep 1		Rep 2		Rep 3	Rep 4
			South			
			Total Planting Area = ~ 0.22 acres			
			Each Rep is 4 rows, 40" apart			
	Remarks: Planted on 5/22/2009 with Kincaid Plot Planter. Four rows per plot.					

Release	Year		Yield Per Ac		Seed Prd/Ac
Loetta	2010		2385.5		182.95
Loetta	2010		4581.3		208.00
Loetta	2010		2827.8		233.05
Loetta	2010		2032.6		162.26
Loetta	2011		1521		194.93
Loetta	2011		746.01		155.73
Loetta	2011		917.15		199.29
Loetta	2011		1244.5		223.25
Loetta	2012		1607		232.32
Loetta	2012		1064.4		251.03
Loetta	2012		1873.4		260.40
Loetta	2012		888.72		195.15
		Average Yield	1807.5	Average Seed Yield	208.20

Release	Year		Yield Per Ac		Seed Prd/Ac
PMT-389	2010		2648.8		167.71
PMT-389	2010		4079.3		192.75
PMT-389	2010		3982.8		152.46
PMT-389	2010		3456.2		175.33
PMT-389	2011		1334		165.53
PMT-389	2011		1291.9		181.86
PMT-389	2011		1243.6		144.84
PMT-389	2011		1184.8		123.06
PMT-389	2012		1409.1		216.56
PMT-389	2012		1339.1		220.31
PMT-389	2012		1334		186.52
PMT-389	2012		1234.9		181.42
		Average Yield	2044.9	Average Seed Yield	175.70

Release	Year		Yield Per Ac		Seed Prd/Ac
La Salle	2010		1592.9		147.02
La Salle	2010		3453.6		156.82
La Salle	2010		2475		137.21
La Salle	2010		2460.1		132.86
La Salle	2011		1386.7		133.95
La Salle	2011		1023.3		143.75
La Salle	2011		746.01		120.88
La Salle	2011		994.38		109.99
La Salle	2012		1428.3		217.85
La Salle	2012		1102.3		201.43
La Salle	2012		904.16		189.37
La Salle	2012		1158.2		184.66
		Average Yield	1560.4	Average Seed Yield	156.31

Study No.: TXPMC-T-0903-BF ICST- Biomass Study

Objective: Switchgrass has been designated as one of the leading biomass energy crops for production, gasification, and liquid field production. The objective of this study is to compare biomass yield and fuel quality of warm season grasses to Maximilian sunflower as dedicated energy crops.

Evaluation Factors: A biomass harvest will be taken four weeks after the first frost by clipping a 14'5" sample. A grab sample will be taken and dried at 55°C for 24 hours. Then yield and % dry matter can be calculated. 100 grams of dried sample will be sent to Agri-Life in Stephenville, TX for chemical analysis.

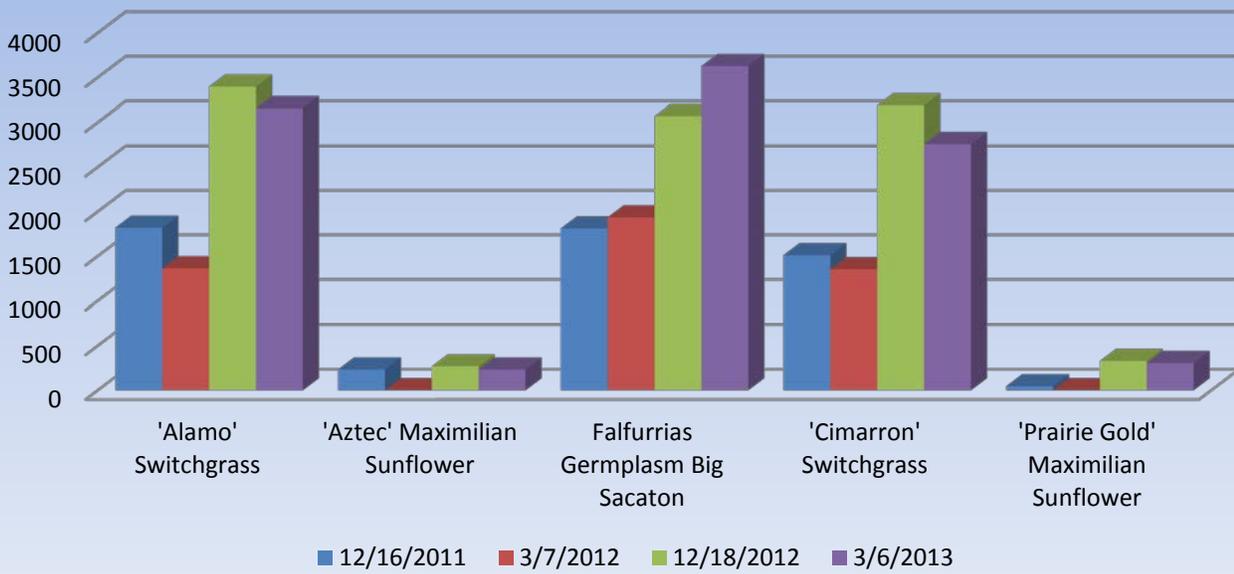
Progress or Status: After two years of data collection at Knox City and three years at Beeville, TX, data indicates that Maximilian sunflower, *Helianthus maximiliani*, does not appear to be as prolific a biomass producer as switchgrass and big sacaton. In both locations, the Maximilian sunflower failed to produce significant biomass. One explanation of this would be drought conditions throughout 2011 and 2012 in Texas. Chemical analysis have not been received to compare at this time. Big sacaton produced excellent biomass yields at Knox City, but did not survive well at Beeville. One more year of data will be collected at Knox City before this study is complete.

Plot Layout Transplanted June 21, 2010

Rep 4	Alamo	Aztec	Prairie Gold	Cimarron	Big Sacaton	Rep 4
Rep 3	Aztec	Cimarron	Big Sacaton	Prairie Gold	Alamo	Rep 3
Rep 2	Prairie Gold	Alamo	Cimarron	Big Sacaton	Aztec	Rep 2
Rep 1	Cimarron	Big Sacaton	Alamo	Aztec	Prairie Gold	Rep 1

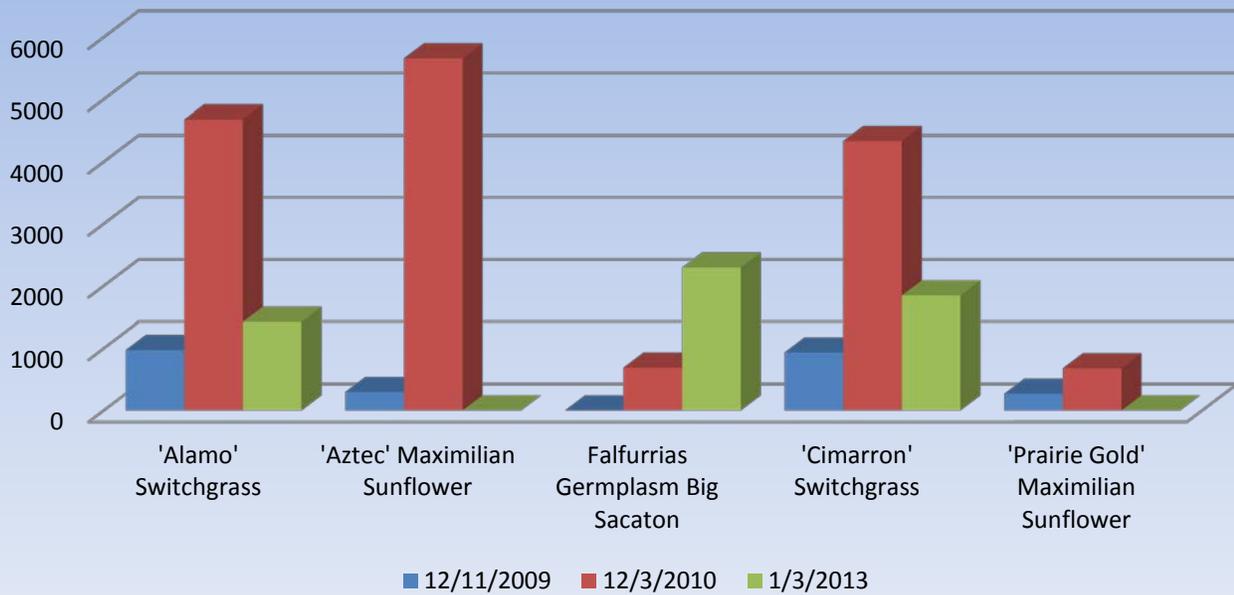
Knox City Biomass Yield

lbs/ac



Beville, TX Biomass Yield

lbs/ac



Study No. : TXPMC-P-0904-RA Evaluation of vine-mesquite

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide for stabilization of soils that have high erosion potential.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Eight-seven collections were submitted to the PMC along with twenty-six accessions the South Texas PMC, and thirty found in the PMC seed vault. These collections were started in the greenhouse and transplanted into rod rows in "N" block in the spring of 2010 and 2011. Currently, there are eighty-three individual rod rows growing for evaluation. Evaluations began in the spring of 2012 and continued through the growing season until frost. Evaluations will continue in 2013 and superior lines will be identified and increased for use in advanced testing.

Scientific Name: *Panicum obtusum*.

Common Name: vine mesquite

Morphological Characteristics:

Habit- native, warm-season perennial grass, 8-24 inches tall; initiates growth in April to May; reproduces by seed, tillers, stolons, and rhizomes.

Inflorescence – panicle 1-1/4 to 6 inches long; 3/16 – 1/2 inch wide; branches erect, distant, usually unbranched

Spikelets – 2 florets, spikelet obovate, 1/8 – 5/32 inches long, glabrous, brown at maturity; upper floret indurate, glabrous, brownish

Awns – glumes, lemmas, and paleas awnless

Glumes – first and second glume nearly as long as spikelet, apex of both obtuse

Culms – erect, 8-24 inches tall, from a knotty or rhizomatous or stoloniferous base

Leaves – sheaths rounded with glandular papilla-based hairs; collar hairy, sometimes pilose on margins; blades firm, 2-8 inches long, 1/16 – 5/16 in wide

Ligules – membranous, 1/32 – 1/16 inch long, apex erose

Other – The stolons of this grass may grow several feet long and have swollen woolly nodes. The brownish, round seeds lie close to the main seed stem forming a narrow seedhead. Often one leaf clings closely to the seedhead.

Habitat and Range: sandy or gravelly or clayey soils in areas of moisture accumulation. Texas distribution: throughout the state except MLRA 133B – Western Coastal Plain

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 342 Critical Area Planting; 550 Range Planting; 647 Early Successional Habitat Development/Management; 391 Riparian Herbaceous Cover; 327 Conservation Cover.

Accn. No	Greenup		50% Greenup		Survival		% Stand		Height		Maturity		Uniformity		Erect/Prostrate		Seed Production		Seed Weight
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2012
9076969	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	7	10	N/A	early	N/A	8	tall	medium	N/A	3	0.925
9076972	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	4	13	N/A	late	N/A	5	medium	short	N/A	6	
9085226	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	6	10	N/A	mid	N/A	5	medium	short	N/A	3	
9085227	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	3	12	N/A	late	N/A	4	medium	medium	N/A	5	
9085238	N/A	2/27/2012	N/A	3/8/2012	7	10	70%	100%	4	10	N/A	late	N/A	7	short	short	N/A	4	
9085244	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	3	13	N/A	early	N/A	4	medium	medium	N/A	3	4.199
9085268	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	4	9	N/A	mid	N/A	7	short	medium	N/A	2	
9085269	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	4	11	N/A	late	N/A	6	tall	medium	N/A	4	
9085303	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	4	10	N/A		N/A				N/A		
9085304	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	18	14	N/A	mid	N/A	4	medium	short	N/A	3	
9085239	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	5	12	N/A	early	N/A	8	medium	medium	N/A	3	
9086246	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	5	16	N/A	mid	N/A	8	tall	tall	N/A	4	0.493
9086265	N/A	2/27/2012	N/A	3/8/2012	8	10	80%	100%	18	13	N/A	mid	N/A	6	tall	medium	N/A	4	
9093046	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	3	13	N/A	mid	N/A	5	medium	medium	N/A	4	
9093045	N/A	2/27/2012	N/A	3/8/2012	8	10	80%	100%	6	10	N/A	mid	N/A	4	short	short	N/A	4	
9093056	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	3	14	N/A	mid	N/A	6	tall	medium	N/A	3	
9093047	N/A	2/27/2012	N/A	3/8/2012	8	10	80%	100%	4	9	N/A	mid	N/A	4	tall	short	N/A	4	
9093054	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	6	16	N/A	mid	N/A	8	tall	tall	N/A	4	
9093080	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	4	9	N/A	mid	N/A	4	medium	short	N/A	3	
9093081	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	4	13	N/A	late	N/A	7	tall	medium	N/A	4	
9093082	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	5	15	N/A	late	N/A	7	tall	tall	N/A	6	
9093084	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	6	17	N/A	mid	N/A	4	medium	medium	N/A	3	
9093079	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	5	14	N/A	late	N/A	5	tall	tall	N/A	5	
9093077	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	4	11	N/A	late	N/A	3	medium	medium	N/A	5	
9093072	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	5	14	N/A	mid	N/A	5	tall	tall	N/A	4	1.935
9093097	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	4	13	N/A	early	N/A	5	tall	medium	N/A	2	2.105
9093105	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	4	10	N/A	mid	N/A	6	medium	medium	N/A	3	
9093085	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	5	12	N/A	mid	N/A	5	medium	medium	N/A	2	
9093111	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	3	14	N/A	mid	N/A	4	medium	medium	N/A	2	
9093117	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	5	16	N/A	mid	N/A	4	tall	medium	N/A	3	
9093108	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	3	17	N/A	mid	N/A	5	medium	medium	N/A	2	
9093095	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	5	13	N/A	mid	N/A	5	medium	medium	N/A	3	
9093134	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	6	15	N/A	early	N/A	6	medium	medium	N/A	2	1.437
9107761	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	5	21	N/A	early	N/A	9	medium	tall	N/A	2	2.558
9093159	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	4	15	N/A	mid	N/A	8	medium	tall	N/A	4	
9107783	N/A	2/27/2012	N/A	3/8/2012	9	10	90%	100%	4	19	N/A	mid	N/A	6	tall	tall	N/A	5	2.043
9107777	N/A	2/27/2012	N/A	3/8/2012	8	10	80%	100%	4	14	N/A	late	N/A	8	tall	medium	N/A	6	1.627
9107769	N/A	2/27/2012	N/A	3/8/2012	7	10	70%	100%	5	18	N/A	mid	N/A	7	medium	medium	N/A	3	1.625
9076970	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	19	N/A	late	N/A	10	erect	tall	N/A	8	3.864

Accn. No	Greenup		50% Greenup		Survival		% Stand		Height		Maturity		Uniformity		Erect/Prostrate		Seed Production		Seed Weight
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2012
9076973	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	16	N/A	mid	N/A	8	flat	short	N/A	5	3.807
9085232	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	18	N/A	late	N/A	6	mid	medium	N/A	8	1.736
9085239	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	14	N/A	mid	N/A	5	mid	short	N/A	7	1.032
9085249	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	16	N/A	late	N/A	8	mid	medium	N/A	8	1.412
9085250	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	15	N/A	late	N/A	7	erect	medium	N/A	9	1.669
9085267	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	19	N/A	late	N/A	4	erect	medium	N/A	9	0.627
FILL																			
FILL																			
9085275	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	22	N/A	late	N/A	6	mid	tall	N/A	7	1.349
9085292	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	16	N/A	mid	N/A	4	mid	tall	N/A	5	3.554
9085293	N/A	2/27/2012	N/A	3/8/2012	10	8	100%	80%	N/A	18	N/A	mid	N/A	7	flat	medium	N/A	4	1.858
9086227	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	21	N/A	mid	N/A	8	flat	tall	N/A	4	4.79
9086228	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	23	N/A	mid	N/A	8	mid	tall	N/A	4	2.174
9086230	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	24	N/A	late	N/A	7	erect	tall	N/A	6	
9089037	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	14	N/A	late	N/A	4	flat	medium	N/A	5	
9090470	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	23	N/A	late	N/A	5	erect	tall	N/A	6	0.659
9093048	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	16	N/A	mid	N/A	4	flat	medium	N/A	3	4.432
9093049	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	21	N/A	mid	N/A	3	flat	medium	N/A	5	5.998
9093050	N/A	2/27/2012	N/A	3/8/2012	10	9	100%	90%	N/A	13	N/A	mid	N/A	5	flat	medium	N/A	4	3.38
9093051	N/A	2/27/2012	N/A	3/8/2012	10	9	100%	90%	N/A	16	N/A	mid	N/A	5	flat	medium	N/A	3	
9093053	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	18	N/A	mid	N/A	6	erect	Short	N/A	3	
9093055	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	19	N/A	mid	N/A	6	mid	medium	N/A	4	4.105
9093057	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	20	N/A	late	N/A	7	mid	tall	N/A	6	1.705
9093074	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	19	N/A	late	N/A	6	flat	tall	N/A	5	7.723
9093075	N/A	2/27/2012	N/A	3/8/2012	10	7	100%	70%	N/A	17	N/A	early	N/A	4	flat	medium	N/A	3	4.964
9093080	N/A	2/27/2012	N/A	3/8/2012	10	9	100%	90%	N/A	17	N/A	mid	N/A	5	flat	medium	N/A	5	
9093081	N/A	2/27/2012	N/A	3/8/2012	5	3	50%	30%	N/A	19	N/A	early	N/A	5	flat	tall	N/A	6	10.035
9093082	N/A	2/27/2012	N/A	3/8/2012	5	3	50%	30%	N/A	17	N/A	mid	N/A	4	flat	tall	N/A	2	1.815
FILL																			
9093089	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	17	N/A	mid	N/A	4	erect	medium	N/A	2	1.378
9093094	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	19	N/A	mid	N/A	5	erect	tall	N/A	3	2.581
9093103	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	17	N/A	mid	N/A	5	mid	medium	N/A	3	4.28
9093099	N/A	2/27/2012	N/A	3/8/2012	10	9	100%	90%	N/A	16	N/A	mid	N/A	5	flat	Short	N/A	3	2.762
9093106	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	21	N/A	mid	N/A	4	flat	medium	N/A	3	5.285
9093110	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	17	N/A	mid	N/A	7	flat	medium	N/A	4	2.162
9093118	N/A	2/27/2012	N/A	3/8/2012	10	9	100%	90%	N/A	22	N/A	early	N/A	6	flat	medium	N/A	2	3.923
9093121	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	19	N/A	mid	N/A	4	erect	medium	N/A	2	1.959
9093124	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	17	N/A	mid	N/A	5	erect	medium	N/A	2	2.466
9093127	N/A	2/27/2012	N/A	3/8/2012	10	8	100%	80%	N/A	17	N/A	mid	N/A	4	flat	medium	N/A	2	2.36
9093129	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	16	N/A	mid	N/A	4	erect	medium	N/A	3	2.239

Accn. No	Greenup		50% Greenup		Survival		% Stand		Height		Maturity		Uniformity		Erect/Prostrate		Seed Production		Seed Weight
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2012
9093131	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	22	N/A	mid	N/A	3	erect	tall	N/A	3	2.048
9093138	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	13	N/A	mid	N/A	5	erect	medium	N/A	3	1.112
9093142	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	15	N/A	mid	N/A	5	erect	medium	N/A	4	8.063
9093143	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	21	N/A	mid	N/A	7	erect	tall	N/A	5	5.403
9093144	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	18	N/A	mid	N/A	8	flat	medium	N/A	5	4.199
9093145	N/A	2/27/2012	N/A	3/8/2012	10	8	100%	80%	N/A	20	N/A	mid	N/A	5	flat	medium	N/A	4	6.431
9093149	N/A	2/27/2012	N/A	3/8/2012	10	8	100%	80%	N/A	22	N/A	mid	N/A	5	flat	medium	N/A	5	4.997
9093152	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	20	N/A	late	N/A	6	flat	tall	N/A	6	6.989
9093154	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	21	N/A	early	N/A	6	flat	tall	N/A	5	6.289
9093157	N/A	2/27/2012	N/A	3/8/2012	7	5	70%	50%	N/A	18	N/A	late	N/A	8	flat	tall	N/A	7	1.587
9093158	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	21	N/A	late	N/A	8	flat	tall	N/A	7	4.072
9107762	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	17	N/A	early	N/A	6	flat	medium	N/A	5	10.695
9107765	N/A	2/27/2012	N/A	3/8/2012	10	8	100%	80%	N/A	15	N/A	early	N/A	4	flat	medium	N/A	4	6.312
9107766	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	16	N/A	mid	N/A	5	flat	medium	N/A	5	6.36
9107768	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	18	N/A	mid	N/A	6	erect	tall	N/A	3	4.448
9107781	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	21	N/A	late	N/A	4	flat	medium	N/A	6	5.568
9107785	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	18	N/A	late	N/A	4	flat	medium	N/A	6	6.035
9107786	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	20	N/A	mid	N/A	6	erect	medium	N/A	3	2.924
9107787	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	23	N/A	mid	N/A	5	erect	tall	N/A	4	1.137
9107788	N/A	2/27/2012	N/A	3/8/2012	10	9	100%	90%	N/A	21	N/A	mid	N/A	5	flat	tall	N/A	4	6.504
9107790	N/A	2/27/2012	N/A	3/8/2012	10	9	100%	90%	N/A	17	N/A	mid	N/A	4	flat	medium	N/A	5	1.315
9107856	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	19	N/A	mid	N/A	5	erect	medium	N/A	4	5.164
PMT 4702	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	19	N/A	mid	N/A	6	erect	tall	N/A	4	4.839
PMT 4830	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	18	N/A	mid	N/A	5	erect	tall	N/A	3	3.618
T4562	N/A	2/27/2012	N/A	3/8/2012	10	10	100%	100%	N/A	22	N/A	early	N/A	6	erect	tall	N/A	6	6.242

1=not
10=
very

1=bad
10=
good

Study No.: TXPMC-P-0905 Evaluation of Blue Grama

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide for stabilization of soils that have high erosion potential.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance

Progress or Status: Forty-six collections were submitted to the PMC. These collections were started in the greenhouse and transplanted into rod rows located in "N" block in the spring of 2010 and 2011. Currently, there are twenty-five individual rod rows growing for evaluation. Evaluations began in the spring of 2012 and continued through the growing season until frost. Evaluations will continue in 2013 and superior lines will be identified and increased for use in advanced testing.

Scientific Name: *Bouteloua gracilis*

Common Name: Blue Grama

Morphological Characteristics:

- native, perennial, warm season bunchgrass that grows 6-26 inches tall
- found on dry slopes, plains, prairies, and foothills of most western states
- leaf blade is thin, flat, or infolded, .5-2 mm broad
- foliage color is gray-green
- flower color is yellow
- seed heads have 1-3 primary unilateral or comb-like branches 1.5-3 cm long
- branches have 40-130 tightly packed spikelets 4-7 mm long
- flower clusters are initially straight and green in color, but eventually dry and turn to a pale, blonde color
- adapted to a wide variety of soil types

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Planting; 562 Recreation Area Improvement; 550 Range Planting; 512 Forage and Biomass Planting; 327 Conservation Cover. The planting of blue grama can provide excellent food and cover benefits for wildlife and livestock, as well as conserve our soil.

Accn. No	Greenup		50% Greenup		Survival		% Stand		Height		Maturity		Uniformity		Erect/ Prostrate		Lodging		Seed Production		Seed Weight
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2012
9093107	N/A	3/28/2012	N/A	4/9/2012	5	4	50%	40%	9	14	Early	Mid	5	6	Erect	Erect	0	0	6	5	0.652
9093112	N/A	3/14/2012	N/A	3/19/2012	4	4	40%	40%	7	16	Early	Mid	6	5	Erect	Erect	0	0	3	5	0.979
9093151	N/A	3/14/2012	N/A	3/19/2012	6	6	60%	60%	9	15	Mid	Mid	6	5	Erect	Erect	0	0	0	4	0.759
439880	N/A	3/14/2012	N/A	3/19/2012	10	10	100%	100%	N/A	16	N/A	Early	N/A	5	N/A	Erect	N/A	0	N/A	6	0.981
9085788	N/A	3/14/2012	N/A	3/19/2012	10	9	100%	90%	N/A	17	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	5	1.86
9093076	N/A	3/14/2012	N/A	3/19/2012	9	9	90%	90%	N/A	18	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	5	1.846
9093102	N/A	3/14/2012	N/A	3/19/2012	6	6	60%	60%	N/A	17	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	5	2.079
9093151	N/A	3/14/2012	N/A	3/19/2012	9	9	90%	90%	N/A	18	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	5	1.043
9093116	N/A	3/14/2012	N/A	3/19/2012	6	6	60%	60%	N/A	14	N/A	Mid	N/A	6	N/A	Erect	N/A	0	N/A	5	1.204
9093120	N/A	3/14/2012	N/A	3/19/2012	7	7	70%	70%	N/A	18	N/A	Late	N/A	6	N/A	Erect	N/A	0	N/A	5	1.347
9093123	N/A	3/14/2012	N/A	3/19/2012	10	9	100%	90%	N/A	16	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	5	1.822
9093126	N/A	3/14/2012	N/A	3/19/2012	8	8	80%	80%	N/A	13	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	5	1.598
9093128	N/A	3/14/2012	N/A	3/19/2012	7	8	70%	80%	N/A	17	N/A	Mid	N/A	6	N/A	Erect	N/A	0	N/A	5	1.189
9093130	N/A	3/14/2012	N/A	3/19/2012	4	4	40%	40%	N/A	12	N/A	Late	N/A	6	N/A	Erect	N/A	0	N/A	5	1.236
9093132	N/A	3/14/2012	N/A	3/19/2012	8	8	80%	80%	N/A	24	N/A	Late	N/A	6	N/A	Erect	N/A	0	N/A	6	0.792
9093135	N/A	3/14/2012	N/A	3/19/2012	9	9	90%	90%	N/A	14	N/A	Mid	N/A	6	N/A	Erect	N/A	0	N/A	6	0.814
9093136	N/A	3/14/2012	N/A	3/19/2012	10	10	100%	100%	N/A	14	N/A	Early	N/A	6	N/A	Erect	N/A	0	N/A	6	0.859
9093137	N/A	3/14/2012	N/A	3/19/2012	6	8	60%	80%	N/A	15	N/A	Early	N/A	6	N/A	Erect	N/A	0	N/A	6	0.961
9093150	N/A	3/14/2012	N/A	3/19/2012	2	3	20%	30%	N/A	10	N/A	Early	N/A	6	N/A	Erect	N/A	0	N/A	6	0.763
9093112	N/A	3/14/2012	N/A	3/19/2012	3	4	30%	40%	N/A	15	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	5	1.371
9093153	N/A	3/14/2012	N/A	3/19/2012	7	8	70%	80%	N/A	15	N/A	Late	N/A	5	N/A	Erect	N/A	0	N/A	5	1.164
9093155	N/A	3/28/2012	N/A	4/9/2012	9	5	90%	50%	N/A	11	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	5	1.583
9107767	N/A	3/14/2012	N/A	3/19/2012	7	7	70%	70%	N/A	13	N/A	Mid	N/A	6	N/A	Erect	N/A	0	N/A	5	1.44
9107770	N/A	3/14/2012	N/A	3/19/2012	2	2	20%	20%	N/A	14	N/A	Mid	N/A	5	N/A	Erect	N/A	0	N/A	6	0.808
9107789	N/A	3/14/2012	N/A	3/19/2012	9	9	90%	90%	N/A	24	N/A	Mid	N/A	6	N/A	Erect	N/A	0	N/A	5	1.565

1= not
10= very

1= good
10= bad

Study No. : TXPMC-P-0907-RA Evaluation of Three-flower melic

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Twenty-five collections of this species have been submitted to the PMC and will request another year of collection. Current collections were planted in greenhouse and transplanted but did not survive the summer. Accessions were started in late summer in the greenhouse and transplanted in the fall of 2012. Data collection will begin in the spring of 2013.

Accession	Origin
9093017	Sutton County, TX
9093018	Sutton County, TX
9093059	Concho County, TX
9093060	Runnels County, TX
9107791	Pecos County, TX
9107793	Mason County, TX
9107794	Sutton County, TX
9107795	Bandera County, TX
9107796	Mason County, TX
9107797	Crockett County, TX
9107799	Bosque County, TX
9107800	Runnels County, TX
9107801	Runnels County, TX
9107803	Edwards County, TX
9107862	Palo Pinto County, TX
9107863	Lampasas County, TX
9107864	Lampasas County, TX
9107940	Edwards County, TX
9107941	Palo Pinto County, TX

Study No. : TXPMC-P-0908-RA Evaluation of showy menodora

Objective: Collection and evaluation for a superior forb plant for use as an improvement of range and pastureland, and provide food such as deer browse and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Currently only six collections of this species have been submitted to the PMC. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Menodora longiflora*.

Common Name: showy menodora

Morphological Characteristics:

Habit- perennial, many-branched half-shrub, up to 18 inches high with woody base; seeds, borne four to a capsule, mature and shatter throughout the summer and early fall.

Leaves – mostly opposite but upper leaves sometimes alternate, usually entire but some lower leaves 2 or 3 lobed; up to 2 inches long.

Inflorescence – panicle 1-1/4 to 6 inches long; 3/16 – 1/2 inch wide; branches erect, distant, usually unbranched

Flowers – yellow with tube up to 2 inches long; 5-lobed; about 1 – 1-1/4 inches across; blooms from June to September.

Habitat and Range – dry, rocky hillsides, usually limestone but also igneous, canyons and ledges along streams in the Edwards Plateau and Trans-Pecos, southeastern New Mexico and Mexico from 1100' to 6600'

Other – This is a species readily eaten by goats, sheep, and deer. It has been browsed out of some of its former area, but because of rocky habitat, it has persisted.

Conservation Use:

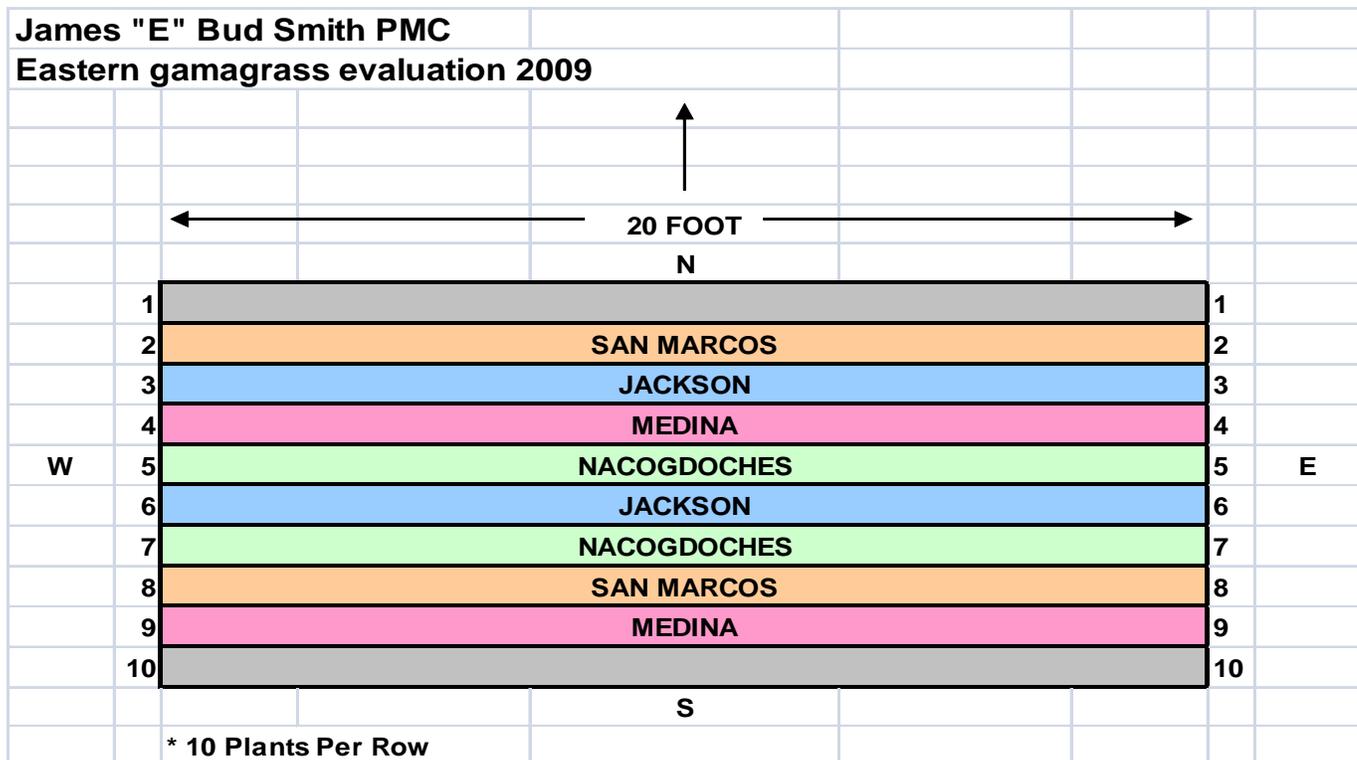
The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 342 Critical Area Planting; 550 Range Planting; 647 Early Successional Habitat Development/Management; 645 Upland Wildlife Habitat Management and 327 Conservation Cover.

Study No.: TXPMC-T-0909-PA ICST- Eastern Gamagrass

Objective: The objective of this study is to determine differences between four different releases of eastern gamagrass. The different releases are: San Marcos, Jackson, Medina, and Nacogdoches.

Evaluation Factors: Plant measurements will be taken on stems, leaves, heads, seed, to determine differences from one release to another. Measurements will be used to compare variety traits for Texas certification program.

Progress or Status: Plots were maintained this year and data collected. Plot layout is shown in map below. Plots will continue to be maintained so additional data collection can be done as requested.



Study No.: TXPMC-T-1002-RA Sampling Protocol for Established and Newly Planted Perennial Grasses for Vegetative Barriers

Objective: Collect raw measurements on various perennial grasses used as vegetative barriers in order to develop a conservation planning tool adapted to the service area.

Evaluation Factors: Plant architecture quantitative measurements will be recorded throughout different growth stages on a established barrier and a newly planted barrier. The growth stages for the established barriers are stem elongation, seed maturing and dormancy. The stages for the newly planted barriers are 2-4 leaf, stem elongation, seed maturity, and dormancy. Measurements taken in the established barriers include: plant height, 6mm stem diameter, 18mm diameter, plot weight, % dry matter, % moisture, yield (lbs/ac), leaf: stem ratio, lodging, and optical porosity. The same measurements will be recorded for the newly planted barrier with the addition of stems per plant and plants per row. All data will be recorded and distributed as raw data. The tables below are a summary of the data that has been recorded for the year 2012.

Progress or Status: Data was collected for both the established barrier plots and the newly established plots. Raw data with photos for porosity is sent to Joel Douglas in Fort Worth for distribution. A newly established will be planted again in the spring 2013 for another additional data set.

Species Used for Established Barrier Plots:

'Alamo' Switchgrass, *Panicum virgatum*

Upland Switchgrass, *Panicum virgatum*

'Selection 75' Kleingrass, *Panicum coloratum*

Species Used for New Barrier Plots:

'Alamo' Switchgrass, *Panicum virgatum*

'Blackwell' Switchgrass, *Panicum virgatum*

'Selection 75' Kleingrass, *Panicum coloratum*

Table 1 Average Plant Measurements for Established Barriers

'Alamo' Switchgrass *Panicum virgatum*

	Height (in)	6'dia (mm)	18'dia (mm)	plot wt (lbs)	sam grn wt	sam dry wt	stem grn wt	stem dry wt	leaf grn wt	leaf dry wt	leaf to stem ratio	% Dry Matter	% Moisture	Yield (lb/acre)	Pre Yr Yield	Total Yield
Stem Elongation	35.5	4.8	3.3	1.392	292.1	61.8	57.4	10.3	55.8	15.5	1.55	0.21989	0.78011	1149.54	43.03	1192.58
Seed Maturity	44.4	5.7	3.8	2.180	279.0	137.9	87.2	38.4	62.9	25.2	0.68	0.51121	0.48879	4342.75		
Dormant	54.1	4.2	3.3	1.545	263.3	229.9	40.0	35.4	17.8	16.1	0.49	0.87349	0.12651	5464.69		

Upland Switchgrass *Panicum virgatum*

	Height (in)	6'dia (mm)	18'dia (mm)	plot wt (lbs)	sam grn wt	sam dry wt	stem grn wt	stem dry wt	leaf grn wt	leaf dry wt	leaf to stem ratio	% Dry Matter	% Moisture	Yield (lb/acre)	Pre Yr Yield	Total Yield
Stem Elongation	22.6	2.9	2.0	0.379	120.4	38.6	11.2	2.3	18.1	5.8	4.42	0.32992	0.67008	488.62	53.89	542.51
Seed Maturity	33.8	4.5	3.4	1.173	274.4	130.6	53.3	26.1	37.6	21.4	0.91	0.47132	0.52868	2397.14		
Dormant	33.0	3.2	2.3	0.485	194.9	175.3	19.2	17.1	13.9	12.5	0.78	0.89954	0.10046	1766.49		

'Selection 75' Kleingrass *Panicum coloratum*

	Height (in)	6'dia (mm)	18'dia (mm)	plot wt (lbs)	sam grn wt	sam dry wt	stem grn wt	stem dry wt	leaf grn wt	leaf dry wt	leaf to stem ratio	% Dry Matter	% Moisture	Yield (lb/acre)	Pre Yr Yield	Total Yield
Stem Elongation	26.5	2.9	1.9	1.260	246.1	68.0	19.9	4.5	18.5	5.4	1.29	0.27294	0.72706	1398.80	14.46	1413.25
Seed Maturity	32.5	4.4	3.2	1.723	304.8	177.3	44.2	19.1	32.0	13.7	0.76	0.58157	0.41843	3980.14		
Dormant	37.3	2.0	1.5	0.980	240.7	198.3	7.3	5.2	2.5	1.7	0.32	0.82469	0.17531	3289.98		

Table 2 Average Plant Measurements for Newly Barriers

'Alamo' Switchgrass *Panicum virgatum*

	Height (in)	6'dia (mm)	18'dia (mm)	plot wt (lbs)	sam grn wt	sam dry wt	stem grn wt	stem dry wt	leaf grn wt	leaf dry wt	leaf to stem ratio	% Dry Matter	% Moisture	Yield (lb/acre)	plts/3 ft row	Stems/Plant
2-4 Leaf Stage	6.9	3.0	1.9	0.017	7.8	1.8	2.0	0.3	5.0	1.3	4.79	0.22697	0.77303	15.83	15.75	
Stem Elongation	21.7	4.3	3.3	0.384	174.5	46.5	36.3	7.9	28.5	10.0	1.33	0.27288	0.72712	414.22	13.00	12.9
Seed Maturity	46.4	3.7	3.0	2.525	319.8	108.3	64.7	22.4	36.7	13.3	0.59	0.33851	0.66149	3473.73		
Dormant	46.0	3.4	2.4	0.685	218.2	178.5	16.9	13.6	10.5	9.3	0.70	0.81828	0.18172	2269.30		

'Blackwell' Switchgrass *Panicum virgatum*

	Height (in)	6'dia (mm)	18'dia (mm)	plot wt (lbs)	sam grn wt	sam dry wt	stem grn wt	stem dry wt	leaf grn wt	leaf dry wt	leaf to stem ratio	% Dry Matter	% Moisture	Yield (lb/acre)	plts/3 ft row	Stems/Plant
2-4 Leaf Stage	7.1	2.8	1.8	0.068	32.4	7.4	2.5	0.5	6.1	1.6	3.78	0.22771	0.77229	62.38	37.25	
Stem Elongation	17.2	3.4	2.8	0.578	262.5	70.7	16.7	3.8	26.9	8.4	2.23	0.27315	0.72685	630.25	17.25	10.9
Seed Maturity	31.5	2.7	1.7	1.003	304.7	119.9	18.6	7.6	22.3	8.8	1.22	0.39354	0.60646	1591.21		
Dormant	29.9	2.4	1.5	0.245	98.6	83.5	7.2	6.1	6.4	5.6	0.92	0.84598	0.15402	839.54		

'Selection 75' Kleingrass *Panicum coloratum*

	Height (in)	6'dia (mm)	18'dia (mm)	plot wt (lbs)	sam grn wt	sam dry wt	stem grn wt	stem dry wt	leaf grn wt	leaf dry wt	leaf to stem ratio	% Dry Matter	% Moisture	Yield (lb/acre)	plts/3 ft row	Stems/Plant
2-4 Leaf Stage	8.9	3.5	2.5	0.188	85.5	16.2	7.8	1.1	11.0	2.5	2.56	0.18915	0.81085	144.24	12.50	
Stem Elongation	27.5	3.2	3.5	1.327	602.5	190.8	55.5	15.7	34.8	11.8	0.76	0.31838	0.68162	1701.70	12.75	21.5
Seed Maturity	38.2	2.8	1.9	5.540	306.6	93.1	56.1	17.8	19.3	6.2	0.35	0.30362	0.69638	6820.71		
Dormant	40.0	2.2	1.4	1.083	256.8	214.0	11.4	9.8	3.4	2.9	0.30	0.83279	0.16721	3660.38		

Study No.: TXPMC-P-1003-PA Initial Evaluation of Texas Cupgrass (*Eriochloa sericea*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Currently forty-seven collections of this species have been submitted to the PMC and will request another year of collection. Currently, there are sixteen individual rod rows growing for evaluation. Evaluations began in the spring of 2012 and continued through the growing season until frost. Data is shown in the table below. Evaluations will be made again in 2013 and superior lines will be selected to move into replicated testing.

Scientific Name: *Eriochloa sericea*

Common Name: Texas Cupgrass

Morphological Characteristics:

- native, an erect perennial bunchgrass
- warm season
- can be found in North Central Texas, the eastern portion of the Edward's Plateau and Rolling Plains, and the Rio Grande Plains
- reproduces by tillers and seed
- seed presses tightly against the seed head and appears to sit in a small cup
- leaves are 1/16 to 1/8 inch wide and 4 to 11 inches in length
- plant height 12-48 inches
- blooming occurs from April through October
- stem of seed head will have a zig-zag appearance after seed falls
- usually grows on a clay or clay-loam soils in prairies or roadsides

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 327 Conservation Cover; 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 562 Recreation Area Improvement; 550 Range Planting; 512 Forage and Biomass Planting; 332 Contour Buffer Strips; 393 Filter Strips; and 528 Prescribed Grazing.

Accn. No	Greenup		50% Greenup		Survival		% Stand		Height		Maturity		Erect/ Prostrate		Lodging		Seed Production	
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
9049269	N/A	3/15/2012	N/A	3/28/2012	9	9	90%	90%	N/A	33	N/A	Mid	N/A	Erect	N/A	0	N/A	2
9049270	N/A	3/15/2012	N/A	3/28/2012	4	4	40%	40%	N/A	24	N/A	Mid	N/A	Erect	N/A	0	N/A	6
9107829	N/A	3/15/2012	N/A	3/28/2012	6	5	60%	50%	N/A	31	N/A	Mid	N/A	Erect	N/A	0	N/A	6
T38705	N/A	3/15/2012	N/A	3/28/2012	4	5	40%	50%	N/A	28	N/A	Mid	N/A	Erect	N/A	0	N/A	8
T43229	N/A	3/15/2012	N/A	3/28/2012	8	5	80%	50%	N/A	25	N/A	Mid	N/A	Erect	N/A	0	N/A	9
T43230	N/A	3/15/2012	N/A	3/28/2012	3	3	30%	30%	N/A	24	N/A	Early	N/A	Erect	N/A	0	N/A	9
T43231	N/A	3/15/2012	N/A	3/28/2012	4	0	40%		N/A		N/A		N/A		N/A		N/A	
T43254	N/A	3/15/2012	N/A	3/28/2012	6	7	60%	70%	N/A	25	N/A	Mid	N/A	Erect	N/A	0	N/A	4
T43290	N/A	3/15/2012	N/A	3/28/2012	2	2	20%	20%	N/A	31	N/A	Mid	N/A	Erect	N/A	0	N/A	7
T43294	N/A	3/15/2012	N/A	3/28/2012	4	4	40%	40%	N/A	28	N/A	Late	N/A	Erect	N/A	0	N/A	4
T43295	N/A	3/15/2012	N/A	3/28/2012	5	4	50%	40%	N/A	29	N/A	Mid	N/A	Erect	N/A	0	N/A	6
T43298	N/A	3/15/2012	N/A	3/28/2012	4	4	40%	40%	N/A	29	N/A	Mid	N/A	Erect	N/A	0	N/A	8
T45759	N/A	3/15/2012	N/A	3/28/2012	4	3	40%	30%	N/A	26	N/A	Late	N/A	Erect	N/A	0	N/A	7
T53730	N/A	3/15/2012	N/A	3/28/2012	8	8	80%	80%	N/A	32	N/A	Mid	N/A	Erect	N/A	0	N/A	3
T53732	N/A	3/15/2012	N/A	3/28/2012	9	9	90%	90%	N/A	33	N/A	Mid	N/A	Erect	N/A	0	N/A	3
T53739	N/A	3/15/2012	N/A	3/28/2012	10	10	100%	100%	N/A	35	N/A	Mid	N/A	Erect	N/A	0	N/A	1

Study No.: TXPMC-P-1004-WL Initial Evaluation of Prairie Bundleflower (Desmanthus leptolobus)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food such as deer browse and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Currently four collections of this species have been submitted to the PMC. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Desmanthus leptolobus*

Common Name: Prairie Bundleflower

Morphological Characteristics:

- native, multi-stemmed, spreading legume
- warm season perennial
- stems are 2-10mm in length and are prostrate to suberect
- petioles are 2-5mm long
- leaflets are narrowly elliptic or linear
- distribution is in post oak savannah, blackland prairies, cross timbers and prairies, Edwards plateau, and rolling plains
- found on prairies and open ground, rocky and clayey areas
- fruit is long, narrow, and bunched on the end of the stems
- flowering occurs from late May through June

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 562 Recreation Area Improvement; 550 Range Planting; 512 Pasture and Hay Planting.

Study No.: TXPMC-P-1005-PA Initial Evaluation of Western Wheatgrass (*Pascopyrum smithii*)

Objective: Collection and evaluation for a superior cool season grass for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Currently twenty-seven collections of this species have been submitted to the PMC. Currently, there are twenty-eight individual rod rows growing for evaluation. Evaluations began in the spring of 2012 and continued through the growing season until frost. Data is shown in the table below. Evaluations will be made again in 2013 and superior lines will be selected to move into replicated testing.

Scientific Name: *Pascopyrum smithii*

Common Name: Western Wheatgrass

Morphological Characteristics:

- native, densely colonizing turf grass
- cool season
- reproduction is both sexually, with seeds, and asexually, from rhizomes
- plant height 12-24 inches
- leaves have bluish-green color, 4-10 inches long, and 1/8 to 1/4 inch wide
- upper surface of leaves is rough to the touch due to the ribbed surface
- seedhead is a dense, narrow spike ranging from 2-6 inches in length
- spikelets are 3/8 to 3/4 inch long and overlap
- ligule is short, membranous, notched or minutely fringed
- found on moist to dry prairies, waste areas, ditch banks, and roadsides
- grows abundantly in areas subject to seasonal poor drainage and during years of heavy rainfall
- dormant in the summer, but plants start growth when daytime temperatures reach 53-55F

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 562 Recreation Area Improvement; 550 Range Planting; 512 Forage and Biomass Planting.

Accn. No	Greenup			50% Greenup			Survival			% Stand			Height		Maturity		Erect/ Prostrate		Seed Production		Seed Weight
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2011	2012	2011	2012	2011	2012	2012
432400	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	6	6	6	60%	60%	60%	N/A	25	N/A	Mid	N/A	Erect	N/A	2	
9107804	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	4	5	5	40%	50%	50%	N/A	16	N/A	Mid	N/A	Erect	N/A	9	
9107805	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	1	1	1	10%	10%	10%	N/A	30	N/A	Mid	N/A	Erect	N/A	9	
9107806	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	0	1	1	0%	10%	10%	N/A	11	N/A	Mid	N/A	Erect	N/A	10	
9107809		Died Out																			
9107811		Died Out																			
9107812	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	1	2	1	10%	20%	20%	N/A	11	N/A	Mid	N/A	Erect	N/A	10	
9107813	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	4	5	5	40%	50%	50%	N/A	18	N/A	early	N/A	Erect	N/A	8	
9107815	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	2	3	3	20%	30%	30%	N/A	14	N/A	Mid	N/A	Erect	N/A	9	
9107816	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	2	2	2	20%	20%	20%	N/A	15	N/A	Mid	N/A	Erect	N/A	9	
9107817	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	1	1	2	10%	10%	20%	N/A	24	N/A	early	N/A	Erect	N/A	8	
9107818	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	3	3	3	30%	30%	30%	N/A	21	N/A	Mid	N/A	Erect	N/A	10	
9107820	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	4	2	3	40%	20%	30%	N/A	20	N/A	early	N/A	Erect	N/A	7	
9107821	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	4	4	5	40%	40%	50%	N/A	18	N/A	early	N/A	Erect	N/A	7	
9107822	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	2	1	2	20%	10%	20%	N/A	17	N/A	Mid	N/A	Erect	N/A	9	
9107823	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	4	3	3	40%	30%	30%	N/A	20	N/A	Mid	N/A	Erect	N/A	4	
9107824	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	2	2	2	20%	20%	20%	N/A	21	N/A	Mid	N/A	Erect	N/A	5	
9107827	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	1	1	1	10%	10%	10%	N/A	17	N/A	Mid	N/A	Erect	N/A	10	
9107828		Died Out																			
9107830	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	3	3	3	20%	30%	30%	N/A	23	N/A	early	N/A	Erect	N/A	9	
9107831		Died Out																			
9107834	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	3	5	4	30%	50%	40%	N/A	23	N/A	early	N/A	Erect	N/A	6	
9107840	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	0	1	1	0%	10%	10%	N/A	11	N/A	Mid	N/A	Erect	N/A	10	
9107848	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	7	6	6	70%	60%	60%	N/A	16	N/A	early	N/A	Erect	N/A	9	
9107850	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	1	1	2	10%	10%	20%	N/A	12	N/A	Mid	N/A	Erect	N/A	10	
Barton	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	4	3	4	40%	30%	40%	N/A	17	N/A	early	N/A	Erect	N/A	8	
Arriba	N/A	12/10/2011	12/10/2012	N/A	12/29/2011	1/15/2013	1	1	1	10%	10%	10%	N/A	15	N/A	Mid	N/A	Erect	N/A	10	
Rosana		Died Out																			

10= bad
1= good

Study No.: TXPMC-P-1006-RA Initial Evaluation of Pink Smartweed (*Polygonum pensylvanicum*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Currently thirty-two collections of this species have been submitted to the PMC. Collections will be started in the greenhouse this winter and transplanted into rod rows in 2013.

Scientific Name: *Polygonum pensylvanicum*

Common Name: Pink Smartweed

Morphological Characteristics:

- native, annual
- warm season
- native habitat includes ponds, quiet streams, canals, ditches and swamps
- reproduces each year from seed
- erect growing plant that reaches heights of 48 inches
- leaves are green in color and have a pointed or oblong shape
- leaves grow about 6 inches long and 1 inch wide
- flowers are pink and white in color, and will bloom from late spring to late fall
- flowers grow in spike-like clusters 2 inches long and ½ inch wide
- seeds are round with a shiny black color

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 562 Recreation Area Improvement.

Study No.: TXPMC-P-1007-CR Initial Evaluation of Knotgrass (*Paspalum distichum*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Currently two collections of this species have been submitted to the PMC. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Paspalum distichum*

Common Name: Knotgrass

Morphological Characteristics:

- native, perennial
- warm season
- grows in clumps or creeping along soil
- stands tend to be short lived and reproduces from rhizomes, stolons, and seed
- stems grow along the soil from 6-72 inches in length
- at nodes on the stem, roots and flowering stems emerge
- plant can cover a circle of a yard or more in diameter
- leaves are narrow, lance-shaped, or oval ½ to 1 ½ inches long
- flower stems will grow up to 18 inches tall
- flowers are 1/8 inch long and grow in clusters of two to three per stem
- color of flowers range from usually pink to red, green, or dull white
- seeds are oval to elongated, light colored, and taper to a point
- adapted to both wet and well-drained areas, frequently found in meadows, marshes, and ditches
- can tolerate high salinity and waterlogged environments
- most active in spring, summer, and fall with most seed production in late summer and fall

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 327-Conservation Cover; 342-Critical Area Planting; 386-Field Border; 390-Riparian Herbaceous Cover; 393-Filter Strips; 512-Forage and Biomass Planting; 550-Range Planting; 560-Access Road; 562-Recreation Area Improvement; 643-Restoration and Management of Rare and Declining Habitats; 644-Wetland Wildlife Habitat Management; 647-Early Successional Habitat Development/Management; 656-Constructed Wetland; 657-Wetland Restoration; 658-Wetland Creation; 659-Wetland Enhancement.

Study No.: TXPMC-T-1101-PA Evaluating Warm Season Grasses for Winter Stockpiling

Objective: Limited information is available on the quality and quantity of native pastures throughout the winter months. Cultivars/selections of warm season grasses will be compared in replicated plots to evaluate the nutritional value and yield potential from the fall through winter months. A comparison will also be made to determine nutritional value and tonnage of winter pastures that are grazed with pastures that are not grazed.

Evaluation Factors: Evaluations will be made between each species as it progresses through the winter months. Biomass and nutritional values will be compared at six different dates to determine the amount and quality of grazing a pasture or rangeland as opposed to baling and storing in a barn. Grass plots will be divided into halves with one half being mowed down to six inches around the first of July. This will simulate a pasture that has been grazed throughout the spring and summer months, but rested in order to provide recovery for winter grazing. A biomass sample will be taken at this time simply to determine the amount of yield at this time of the year.

Progress or Status: Study was transplanted in the spring 2012. No data will be collected the first year. Data collection will begin in the summer of 2013.



Data collection

Forage samples will be collected from both the clipped and unclipped blocks using a flail-cutting forage harvester. A clipping of 24 inches by 64 inches will be taken at each clipping date to determine yield.

Clipping Dates (approximate)
October 15
November 15
December 15
January 15
February 15
March 15

Average plant height will be recorded at time of harvest.

Grass will be clipped six inches from soil surface.

Plot weight will be determined from the 24" X 64" clipping.

A subsample will be collected and oven dried at 55 degree C for 16-24 hrs for dry matter determination and chemical analysis

Sample will be ground through a 1mm screen for % crude protein and % *in vitro* dry matter digestibility

Figure 3 Plot Layout for Standing Hay Study

	R	S		S	R		S	R		R	S		S	R		R	S					
	2	3		3	2		5	3		3	5		4	6		5	3					San Marcos Eastern Gamagrass
	3	4		4	6		4	5		2	2		6	5		6	4					
	1	2		5	3		3	6		4	3		2	3		3	1					Selection 75 Kleingrass
	6	5		2	1		1	4		1	4		5	4		2	5					
	5	1		6	5		6	1		6	6		3	2		4	6					Lometa Indiangrass
	4	6		1	4		2	2		5	1		1	1		1	2					
																						Alamo Switchgrass
	S	R		R	S		R	S		R	S		S	R		S	R					
	1	2		1	3		3	6		2	5		4	2		6	4					WW-BDAHL Old World Bluestem
	2	6		2	6		4	1		4	4		3	5		2	6					
	4	3		3	5		2	5		3	2		6	3		4	1					OK Select Germplasm Little Bluestem
	5	4		6	1		1	2		1	6		1	4		3	5					
	3	5		4	2		6	4		6	3		2	6		1	3					
	6	1		5	4		5	3		5	1		5	1		5	2					
																						S Season Long Growth (Ungrazed)
	R	S		S	R		R	S		S	R		R	S		S	R					R Regrowth (Grazed)
	4	5		4	5		5	4		3	1		3	6		4	4					
	2	1		2	6		4	3		4	5		5	1		6	5					
	6	3		6	4		2	6		1	3		6	3		3	1					
	3	2		1	3		1	5		2	4		1	5		1	6					
	5	4		5	2		6	2		5	2		4	2		5	3					
	1	6		3	1		3	1		6	6		2	4		2	2					
	S	R		S	R		S	R		R	S		S	R		R	S					
	5	2		5	4		1	5		6	5		3	5		1	4					
	3	4		3	5		4	2		2	4		2	6		2	1					
	2	6		6	1		6	3		1	3		4	1		4	6					
	6	5		4	2		2	1		4	6		5	2		3	5					
	4	3		1	6		3	6		5	1		6	4		6	2					
	1	1		2	3		5	4		3	2		1	3		5	3					

Study No.: TXPMC-P-1102-RA Initial Evaluation of Roundhead Lespedeza (*Lespedeza capitata*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: No collections were received during 2012. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Lespedeza capitata*

Common Name: Roundhead Lespedeza

Morphological Characteristics:

- bean Family (Fabaceae)
- herbaceous native perennial
- erect stems is simple and branched above
- petioles are 2-5 mm shorter than the stalk of the terminal leaflet
- numerous small trifoliolate leaves that are 4.5 1.8 cm and variable in shape and pubescence, often crowded along stem
- leaves and stems densely covered with appressed hairs giving the plant a silvery sheen
- flowers in August and September
- pea like flowers crowded in conspicuous green ball like clusters that are grouped together at the tips of the stems and are often overlooked
- flower petals white with purple spot on banner petal
- calyx lobes are all separate and the wings exceed the keel
- cinnamon brown seeds heads after leaves drop
- fruits indehiscent and one seeded
- deep tap roots (2.5 meters) with many branched roots near the soil surface that extends up to a meter in all directions
- found in dry, open woods, sand dunes and prairies

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 550 Range Planting; 512 Forage and Biomass Planting. 562 Recreation Area Improvement.

Study No.: TXPMC-P-1103-PA Initial Evaluation of Switchgrass (*Panicum virgatum*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Eighteen collections were received during 2012. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Panicum virgatum*

Common Name: Switchgrass

Morphological Characteristics:

- Warm season perennial sod-forming(upland) bunchgrass(lowland) grass that grows 3 to 10 feet tall that is native to all of US except California and the Pacific Northwest
- Found in all of Knox City PMC's service area
- Stems are erect 3 to 10 ft tall, robust, with short rhizomes; stems firm and tough
- The rhizomes are scaly and creeping
- Sheaths are rounded, often red to purplish at base; blades are 10-24 inches long and 1/8 to 9/16 wide, flat, elongate, adaxial surface at the blade base with a triangular patch of hair
- Distinguished from other warm-season grasses by the hair at the point where the leaf attaches to the stem at all stages of development.
- Ciliate membrane 1/32-5/32 inch long, apex truncate to rounded
- Panicle is 6-24 inches long, pyramid-shaped, open with seed borne on the tips of the branches; lower nodes with branches in whorls
- Spiklets have 2 florets, the lower florets are sterile or staminate ,the upper floretsperfect and fertile; the upper lemma 1/8-3/16 in long, and are smooth and shiny, the margins clasp the palea
- The glumes are unequal, acute to acuminate, the first glume is 3/4th the length of the second and encircles the base of the second glume
- The glumes, lemmas, and paleas are awnless
- Starts growth in March and April and seed mature late lte August through October, the flowering and seed maturity is different on the same panicle.
- Ripe seeds sometimes take on a pink or dull-purple tinge, and turn golden brown in the fall
- Reproduces from seed, rhizomes, and tillers
- Two major forms have developed , lowland and upland, upland types are generally shorter have more vigorous rhizomes making them more sod forming, upland have more cold tolerance, lowland are more sensitive to moisture stress; the Knox City PMC is interested in collecting both forms

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 550 Range Planting; 512 Forage and Biomass Planting.

Study No.: TXPMC-P-1104-PA Initial Evaluation of Plains Lovegrass (*Eragrostis intermedia*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Four collections were received during 2012. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Eragrostis intermedia* A.S. Hitchc.

Common Name: Plains Lovegrass

Morphological Characteristics:

- native, perennial bunchgrass
- warm season
- leaves are 6-8 in long and less than ½ in wide
- pyramid-shaped panicle 8-16 inches long and 6-12 inches wide
- has long, silky hairs in the axils of the lowermost branches of the seed head
- plant height is 2-3½ feet tall
- spikelet has 3-9 flowers
- seed is reddish-brown with a rectangular shape
- starts growth in early spring
- flowers from June to November
- reproduces from seeds and tillers
- primarily found on dry, sandy, clayey, or rocky soils

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 562 Recreation Area Improvement; 550 Range Planting; 512 Forage and Biomass Planting; 332 Contour Buffer Strips; 393 Filter Strips; and 528 Prescribed Grazing.

Study No.: TXPMC-P-1105-PA Initial Evaluation of Hall's Panicum (*Panicum hallii*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Two collections were received during 2012. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Panicum hallii* Vasey

Common Name: Halls Panicum

Morphological Characteristics:

- native, perennial bunchgrass
- warm season
- leaves are flat and glabrous
- curling basal leaves at maturity or when dried
- panicle is outline pyramidal with few branches
- spikelets are located on short pedicels
- plant height is 6-28 inches with nodes that can be glabrous to pubescent
- starts growth in early spring
- flowers from April to November
- reproduces from seeds and tillers
- occurs on dry, arid soils
- adapted to sand or clay soils, particularly calcareous soils

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 562 Recreation Area Improvement; 550 Range Planting; 512 Forage and Biomass Planting; 332 Contour Buffer Strips; 393 Filter Strips; and 528 Prescribed Grazing.

Study No.: TXPMC-P-1106-RA Initial Evaluation of Scurfpea (*Psoralea tenuiflora*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Eight collections were received during 2012. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Psoralea tenuiflora*

Common Name: Scurfpea

Morphological Characteristics:

- native forb
- warm season
- 8-20 inches tall with many branches
- Stems are erect or ascending, 1 to several, wiry, longitudinally ridged, grayish hairy, stems readily disarticulates from crown at maturity
- Leaves are alternate, palmately compound, stem-leaves 5 foliate, branch leaves often 3-foliate: leaflets elliptic to oblanceolate, ½ to 2 inches long, ¼ to ½ inch wide, densely pubescent below and on margins, very sparse pubescent above. Surface glandular dotted
- flowers are solitary to 4 per node, pea-like up to ¼ inch long, 5 blue-violet petals and a short calyx with 5 teeth, calyx green to purple, flowers June- August
- seedpod is about ¼ inch long, ovoid and flattened, terminating into short beak, single seed, seed matures at different time on the plant
- root system is a long slender deep taproot, very drought tolerant
- adapted to dry sandy or rocky prairie, plains, open woods and along roadsides
- Distributed throughout Texas except for the Pineywoods and the South Texas Plains.

Conservation Use:

The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 562 Recreation Area Improvement; 550 Range Planting.

Study No.: TXPMC-P-1107-WL Initial Evaluation of Narrow Leaf Globe Mallow (*Sphaeralcea angustifolia*)

Objective: Collection and evaluation for a superior plant for use as an improvement of range and pastureland, and provide food and cover for wildlife.

Evaluation Factors: The following traits will be evaluated: green up date, vigor, height, maturity, uniformity, seed production, leaf and stem dimensions, susceptibility to insect, disease, and cold, and drought tolerance.

Progress or Status: Ten collections were received during 2012. Species will remain on the plant collection request list in hopes of adding more samples to this collection before moving forward into rod rows.

Scientific Name: *Sphaeralcea angustifolia*

Common Names: Narrow Leaf Globemallow, Copper Globemallow

Morphological Characteristics:

- Cool season
- Drought tolerant
- Plant height 1 to 4 ft, most common around 18 inches.
- Habitat: prairie, plains, pastures, savannahs, hillsides, slopes
- stems are spreading to erect, stout, somewhat branched, leafy, densely covered with star-shaped hairs
- leaves are alternate, lowest long-stalked, others short-stalked, oblong-lanceolate to linear-lanceolate, 2-4 inches long, ¼ to 1 inch wide, firm; margins toothed with shallow, rounded teeth, scratchy star-shaped hairs, gray-green in color
- Inflorescences: panicle, compact, many-flowered, conspicuously leafy: flowers clustered in leaf axils.
- The flowers are ½ to ¾ inch wide; stalk stout, shorter than calyx; calyx 1/5 to 2/5 inch long, 5 lobed; lobes lanceolate to triangular; tips pointed 5 petals, ¼ to ¾ inch long, the color is variable, red, orange, salmon, or violet, tips notched; stamen column half to nearly as long as petals; 10-15 carpels
- Flowers bloom at various on entire plant
- Blooms March-November
- Seed are in capsule that is egg shaped to ellipsoid, 1-3 seeded, star-shaped hairy or nearly glabrous; seeds are kidney-shaped

Conservation Use:

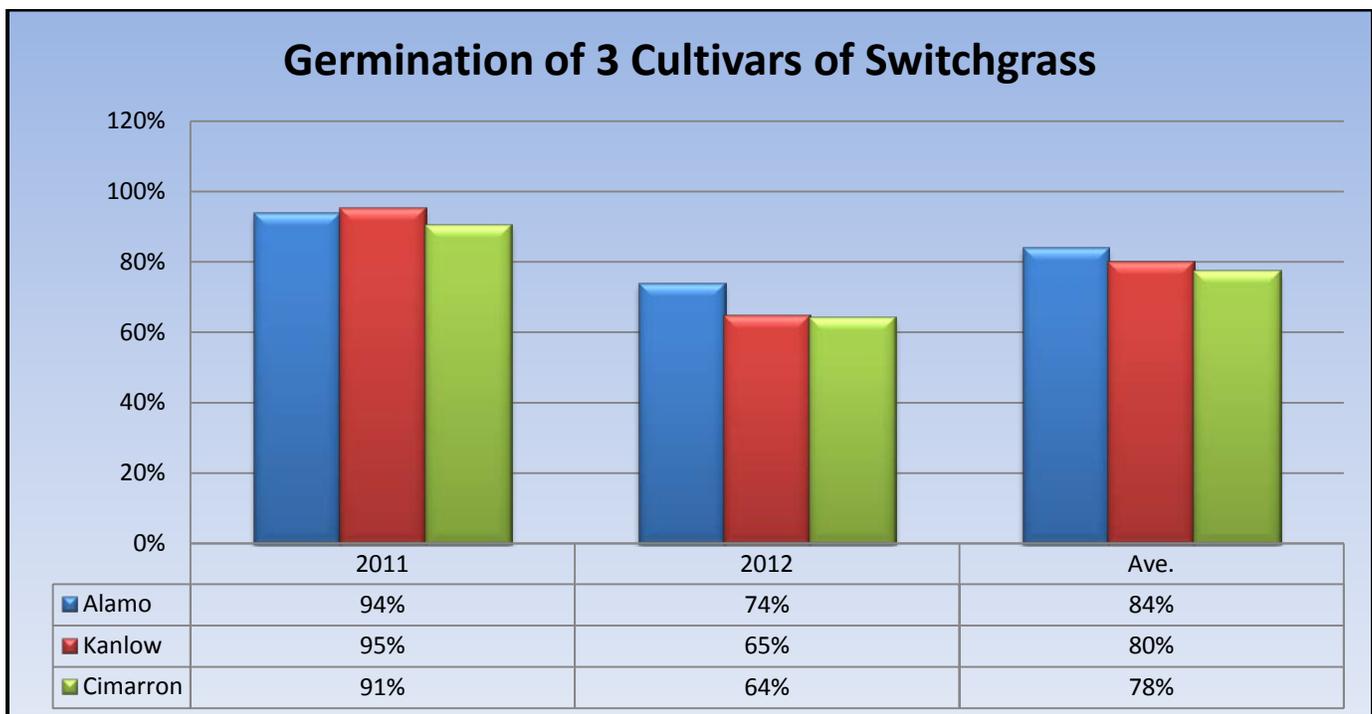
The James E. "Bud" Smith plant materials center has identified this plant as having potential benefits to the following conservation practice standards: 645 Upland Wildlife Habitat Management; 342 Critical Area Plantings; 562 Recreation Area Improvement; 550 Range Planting.

Study No.: TXPMC-T-1108-PA Germination of Three Cultivars of Switchgrass

Objective: Switchgrass (*Panicum virgatum*) can be difficult to establish in certain areas. Germination at the James E. "Bud" Smith Plant Materials Center in Knox City, TX has historically been high in most years. Other areas have noticed difficulty establishing switchgrass. Three cultivars, 'Alamo', Cimarron, and Kanlow will be grown in a replicated test to determine whether this is due to cultivar differences or environmental conditions. Harvested seed will be compared by germination.

Evaluation Factors: Cultivars will be evaluated by testing the germination in a replicated study.

Progress or Status: Plots were started in the greenhouse and transplanted in the spring of 2011. Irrigation was provided to aid in establishment. Seed was harvest in the fall of 2011 and 2012 for germination tests.



Study No.: TXPMC-T-1109-RA Seed Count

Objective: Seed count information dates back to several years and in many cases, only one source was counted. Improvements in technology have enabled more precise counts to be obtained. Also, seed weights can differ from one year or production area to another. Environmental conditions such as temperature, humidity and precipitation during the growing season can all influence seed weight. Harvesting, processing, and storage of seed can also affect the weight of the seed. To determine accurate seed weights, multiple samples need to be counted. Counting seed with from different years and locations will give a better idea of the average weight of each species. From this average, planting rates can be adjusted to maximize productivity while keeping costs at a minimum.

Evaluation Factors: Each year's harvest will be counted using the PMC seed counter or manually counting one pound. Slick seed will be counted on the seed counter and fluffy seed that will not flow through the seed counter will be counted manually as time permits. The seed counts are kept in a Microsoft excel spreadsheet.

Progress or Status: All lots of PMC releases stored in the PMC cold room have been counted up through the 2012 harvest.

Grasses

Release	Common Name	Scientific Name	Lot Number	Year	Seed/ Pound
Alamo	Switchgrass	<i>Panicum virgatum</i>	SWC-76-PVH	1976	348,456
			SCO-92-	1992	456,520
			SFD-08-PV	2008	389,054
			SFD-09-PVP09	2009	500,112
			SBR-09-PVMH	2009	403,703
			SBR-10-M1--	2010	397,584
			SBR-10-O-09	2010	409,324
			SBR-11-M1--	2011	594,558
	Average				437,414
Haskell	Sideoats Grama	<i>Bouteloua curtipendula</i>	SBR-11-Y--	2011	189,000
			SBR-10-M1--	2010	232,932
			433946-1-88	1988	160,912
			SFD-05-	2005	244,193
			SFD-08-	2008	285,885
			SFD-04-	2004	226,961
			SBR-11-M1--	2011	186,252
	Average				218,019

Release	Common Name	Scientific Name	Lot Number	Year	Seed/ Pound
Lometa	Indiangrass	<i>Sorghastrum nutans</i>	PMT-1733	1979	168,434
			SBR-11-M1--	2011	304,549
			SBR-10-M1--	2010	165,669
			SBR-10-W-01	2010	170,899
			SFD-88	1988	153,846
			SBR-03-H	2003	160,389
			SFD-07-434362	2007	219,742
			SFD-09-SNP01H	2009	193,862
			SBR-11-W-01	2011	301,722
	Average				204,346
Earl	Big Bluestem	<i>Andropogon gerardii</i>	SFD-01-M	2001	191,531
			SCO-06-408932-DO	2006	186,147
			SFD-96-AG	1996	130,607
			SFD-96-AGH	1996	134,251
			SCO-99-M	1999	137,552
				Average	
Selection 75	Kleingrass	<i>Panicum coloratum</i>	SBR-11-M1--	2011	660,584
			SCO-88-2	1988	751,713
				Average	
Saltalk	Alkali Sacaton	<i>Sporobolus airoides</i>	434445-82M	1982	1,014,474
			Saltalk 96	1996	1,490,950
			PMT-326-78	1978	1,061,788
			PMT-155-69M	1969	1,564,396
				Average	
San Marcos Germplasm	Eastern Gamagrass	<i>Tripsacum dactyloides</i>	434493-99-2	1999	6,160
			434493-07	2007	5,940
			434493-06	2006	6,695
			434493-05	2005	5,849
			SFD-09-TDP94	2009	11,184
			SGO-12-H-94	2012	12,292
				Average	
Potter County Germplasm	Spike Dropseed	<i>Sporobolus contractus</i>	SCO-01-	2001	1,224,846
	Average				1,224,846

Release	Common Name	Scientific Name	Lot Number	Year	Seed/ Pound
Ok Select Germplasm	Little Bluestem	<i>Schizachyrium scoparium</i>	SGO-10-Y--	2010	267,857
			SGO-10-W-08	2010	259,448
			SCO-06-SSC	2006	241,582
			SGO-07-9029926	2007	309,523
			SCO-05-	2005	285,714
			SCO-08-	2008	251,235
			SGO-11-W-Y-	2011	330,333
			SWC-81-SSH	1981	253,485
			SCO-08-YR1H	2008	253,189
				Average	
Duck Creek Germplasm	Texas Dropseed	<i>Sporobolus texanus</i>	9029932-90	1990	1,897,204
			9029932-90	1990	1,458,348
					1,677,776

Legumes

Release	Common Name	Scientific Name	Lot Number	Year	Seed/ Pound
Sabine	Illinois Bundleflower	<i>Desmanthus illinoensis</i>	SFD-09-DIP09	2009	62,871
			SBR-10-M1--	2010	78,894
			SBR-10-L-09	2010	81,744
			Sabine 98	1998	60,014
			SBR-11-M1--	2011	67,121
			SBR-11-L-09	2011	67,056
			SBR-12-L-09	2012	71,912
				Average	
Hondo Germplasm	Velvet Bundleflower	<i>Desmanthus velutinus</i>	SGO-10-Q-08	2010	77,372
			SGO-10-K-08	2010	88,232
			SCO-08-DV	2008	63,914
			SGO-10-M1--	2010	74,974
			477961-99	1999	72,928
			SGO-10-M1--	2010	73,552
				Average	
Comanche	Partridge Pea	<i>Chamaecrista fasciculata</i>	1990	1990	55,782
			SBR-09-CFP09	2009	55,768
			SBR-10-M1--	2010	65,834
			Comanche-91	1991	65,182
			SBR-11-M1--	2011	59,494
			SBR-11-N-11	2011	67,610
			SBR-12-N-11	2012	72,220
	Average				63,127
Plains Germplasm	Prairie Acacia	<i>Acacia angustissima</i>	SCO-08-PA	2008	22,340
			SCO-05-	2005	23,416
			SCO-06-AAN-MIX	2006	22,722
			SGO-10-D-03	2010	23,250
			SGO-11-D-03	2011	26,296
			SGO-12-D-03	2012	26,804
	Average				24,138

Release	Common Name	Scientific Name	Lot Number	Year	Seed/ Pound
Cuero Germplasm	Purple Prairie Clover	<i>Dalea purpurea</i>	SGO-10-K-08-09	2010	334,264
			SCO-09-DP09	2009	225,776
			SBR-09-DPM1H	2009	218,260
			SGO-11-K-08-09	2011	215,892
			SGO-10-M1--	2010	294,029
			SGO-12-K-08-09	2012	235,140
	Average				253,894

Forbs

Release	Common Name	Scientific Name	Lot Number	Year	Seed/ Pound
Eldorado	Engelman's Daisy	<i>Engelmannia peristenia</i>	PMT-874	1979	58,414
			SBR-11-J-0509S	2011	93,152
			SBR-12-J-05-09	2012	76,884
			Average		76,150
Plateau	Awnless Bushsunflower	<i>Simsia calva</i>	SBR-10-M1--	2010	332,977
			SBR-10-J-05-09	2010	523,336
			SBR-11-J-0305S	2011	351,456
			SBR-11-J-0305C	2011	369,240
			SBR-12-J-03-09	2012	343,320
			Average		384,066
Aztec	Maximilian Sunflower	<i>Helianthus maximiliani</i>	SBR-10-N-09	2010	243,424
			SBR-11-N-09	2011	239,132
			SBR-10-M1--	2010	230,303
			SBR-11-M1--	2011	238,279
			SBR-05-HMAH-MIX	2005	278,540
			SBR-99-HMH	2999	174,734
			SBR-09-HMM1	2009	212,989
			SBR-12-N-09	2012	209,514
			Average		228,364
Kerr Germplasm	Wright's Pavonia	<i>Pavonia lasiopetala</i>	SGO-10-N-09	2010	50,405
			SWC-78-PLH	1978	26,712
			SGO-11-N-09	2011	30,812
			Average		35,976

Trees and Shrubs

Release	Common Name	Scientific Name	Lot Number	Year	Seed/ Pound
Yellowpuff	Littleleaf Leadtree	<i>Leucaena retusa</i>	SFD-87-	1987	9,769
	Average				9,769
Rainbow	Wild Plum	<i>Prunus</i>	PMT-3788	1979	1,362
			SFD-10-C-2-00	2010	1,244
	Average				1,303
Boomer	Bur Oak	<i>Quercus macrocarpa</i>	T-4550	1979	82
			SFD-11-Yard-	2011	87
	Average				85

Study No.: TXPMC-T-1110-RA North Texas Ecotype Project

Objective: TXDOT has provided funding to develop and release plant materials that can be used for highway roadside plantings. The goal is to develop a diverse mix of plant materials that can be used across the state of Texas. The agreement was made with North Texas Ecotypes, a division of South Texas Natives. North Texas Ecotype has cooperated with the PMC to use land to grow and evaluate new collections as well as produce seed for this project. Plant collections made through this project will be given a NRCS accession number and stored in the seed storage cooler at the PMC.

Evaluation Factors: All evaluations and testing will be conducted by South Texas Natives for release. The PMC/NRCS will be included as a secondary release agency.

Progress or Status: The North Texas Ecotype Project currently has over 700 individual rod rows with more expected for 2013. There is a 1 ac block being used to test different mixes for highway restoration. The PMC has also assigned 450 accession numbers for plant collections that will be used and evaluated through this project.

Study No.: TXPMC-T-1201-CP Winter Cover Crop Demonstration Following Irrigated Cotton

Objective: Cover crop mixes are becoming increasingly popular. Higher production cost and drought conditions are forcing producers to look at more economical ways to farm. There is also a growing concern for the soil and its ability to continue to meet the world food and clothing needs of the future. Little work has been conducted in respect to implementing a cover crop and no till management practice in the PMC service area. Producers are looking for advice and guidance to transition from heavy tillage management practices to no-till production. The purpose of this demonstration is to show producers how to make the transition to using cover crop mixes. The three management options (cover crop mix, monoculture, and tillage) will allow producers to see how improved soil health can improve the condition of the soil in an irrigated cotton production system. It will also answer any doubts about nutrient, water, and pest management that many producers are concerned about.

Evaluation Factors: Each year, soil samples and yield data will be compared to previous years. The expectation is that each year soil health should continue to improve with a decrease in farm inputs. The final evaluation should be a technical guide on how to incorporate cover crops into common service areas throughout the PMC service area.

Progress or Status: First year cash crop was planted in spring of 2012 and harvested during fall. Below is yield of three treatments and initial soil sample analysis along with commercial fertilizer added the first year. The cocktail mix and monoculture will be planted after harvest and soil will be analyzed next spring.

Materials and Methods: Plots will be grown in a manner consistent with an irrigated cotton production system. Three different treatments will be planted side-by-side consisting of ½ acre each. (Cover crop mixes, monoculture covers, and tillage management practices). Cotton will be planted with a no till planter on 40 inch rows. Cotton will be planted at a rate 3-4 seed per foot.

Soil samples will be taken annually when cover crops are terminated. The samples will be sent to Temple, TX where Rick Haney will run the soil analysis. Fertilizer will be added to each individual plot to bring fertility up to levels needed to produce a 2 bale/acre yield. Soil moisture and temperature will also be recorded on each plot. Readings will be taken weekly at the same time of day.

Irrigation will be applied in accordance with normal cotton production. Weeds will be controlled either with chemical or by hoeing, depending on the cotton variety planted each year.

A sample of four rows 100 feet long will be stripped and weighed. From the stripped sample, a grab sample will be taken. The sample should be weighed, lint and seed removed from burs and trash, and air dried. Then the dry weight is recorded so yield can be calculated.

Cover crop mix will be either broadcast before defoliation of cotton or drilled with no-till drill immediately following harvest. Monoculture crop will be no-till drilled following harvest. Tillage will begin following harvest to prevent weed growth and for land preparation.

2012 Irrigated Cotton Cash Crop Yield

Treatment		Plot Weight (lbs)	Sample Wet Wt (g)	Sample Dry Wt (g)	% Moisture	Seed Cotton	Yield lb/ac*
Irrigated Cotton	Mix	140.55	990	650	0.656566	3015.10	844.23
Irrigated Cotton	Wheat	125.54	655	485	0.740458	3037.22	850.42
Irrigated Cotton	Fallow	120.72	635	475	0.748031	2950.48	826.13

*yield based on a 28% gin turnout

N-P-K

Sample ID lbs per acre	Nitrogen	Phosphate	Potassium	Nutrient value per acre
Cotton/Mix	23.16	84.40	400.40	\$223.46
Cotton/Monoculture	20.84	61.43	566.80	\$261.02
Cotton/Tillage	16.07	64.09	598.00	\$271.81
Stika ND	110.43	188.58	469.30	\$379.76

Fertilizer Application

46-0-0

	Needed for 2 bale/ac	Apply (lbs/1/2acre)
Cotton/Mix	100	83.52
Cotton/Monoculture	100	86.04
Cotton/Tillage	100	91.23

Soil Health

Sample ID	Solvita 1-day CO2-C	Organic C	% MAC	Organic N	% Organic N	Organic C:N	Organic N:P	Soil Health Calculation	Cover crop mix
Cotton/Mix	23.70	143.44	16.52	11.24	73.03	12.76	1.21	94.56	40% Legume 60% Grass
Cotton/Monoculture	27.70	166.78	16.61	11.02	66.51	15.13	0.86	72.98	40% Legume 60% Grass
Cotton/Tillage	31.00	152.27	20.36	8.90	63.57	17.11	0.64	75.65	40% Legume 60% Grass
Stika ND	75.70	327.00	23.15	31.25	37.17	10.46	4.44	82.23	20% Legume 80% Grass

Nitrogen

Sample ID all lbs\acre	Total N	Inorganic N	Organic N	Organic N release	Organic N reserve
Cotton/Mix	30.78	8.30	22.48	\$8.10	14.37645557
Cotton/Monoculture	33.14	11.10	22.04	\$6.18	15.85500778
Cotton/Tillage	28.00	10.20	17.80	\$3.86	13.93893433
Stika ND	168.16	105.66	62.50	\$34.58	27.92023865

Flags

Sample ID	Nitrogen	Phosphate
Cotton/Mix	0	0
Cotton/Monoculture	0	0
Cotton/Tillage	0	0
Stika ND	0	High Inorganic P

Phosphate

Sample ID lbs/acre	Total P	Inorganic P	Organic P	Organic P release	Organic P reserve	% P saturation
Cotton/Mix	103.50	82.16	21.34	\$2.25	19.0979795	2.59515572
Cotton/Monoculture	89.70	60.12	29.58	\$1.31	28.2674047	1.58343482
Cotton/Tillage	95.68	63.85	31.83	\$0.24	31.58956958	1.6680032
Stika ND	194.12	177.93	16.19	\$10.65	5.539498138	42.7125511

Study No.: TXPMC-T-1202-CP Winter Cover Crop Demonstration Following Dryland Cotton

Objective: Cover crop mixes are becoming increasingly popular. Higher production cost and drought conditions are forcing producers to look at more economical ways to farm. There is also a growing concern for the soil and its ability to continue to meet the world food and clothing needs of the future. Little work has been conducted in respect to implementing a cover crop and no till management practice in the PMC service area. Producers are looking for advice and guidance to transition from heavy tillage management practices to no-till production. The purpose of this demonstration is to show producers how to make the transition to using cover crop mixes. The three management options (cover crop mix, monoculture, and tillage) will allow producers to see how improved soil health can improve the condition of the soil in a dryland cotton production system. It will also answer any doubts about nutrient, water, and pest management that many producers are concerned about.

Evaluation Factors: Each year, soil samples and yield data will be compared to previous years. The expectation is that each year soil health should continue to improve with a decrease in farm inputs. The final evaluation should be a technical guide on how to incorporate cover crops into common service areas throughout the PMC service area.

Progress or Status: First year cash crop was planted in spring of 2012 and harvested during fall. Below is yield of three treatments and initial soil sample analysis along with commercial fertilizer added the first year. The cocktail mix and monoculture will be planted after harvest and soil will be analyzed next spring.

Materials and Methods: Plots will be grown in a manner consistent with an dryland cotton production system. Three different treatments will be planted side-by-side consisting of ½ acre each. (Cover crop mixes, monoculture covers, and tillage management practices). Cotton will be planted with a no till planter on 40 inch rows. Cotton will be planted at a rate 2-3 seed per foot.

Soil samples will be taken annually when cover crops are terminated. The samples will be sent to Temple, TX where Rick Haney will run the soil analysis. Fertilizer will be added to each individual plot to bring fertility up to levels needed to produce a 1 bale/acre yield. Soil moisture and temperature will also be recorded on each plot. Readings will be taken weekly at the same time of day.

Weeds will be controlled either with chemical or by hoeing, depending on the cotton variety planted each year.

A sample of four rows 150 feet long will be stripped and weighed. From the stripped sample, a grab sample will be taken. The sample should be weighed, lint and seed removed from burs and trash, and air dried. Then the dry weight is recorded so yield can be calculated.

Cover crop mix will be either broadcast before defoliation of cotton or drilled with no-till drill immediately following harvest. Monoculture crop will be no-till drilled following harvest. Tillage will begin following harvest to prevent weed growth and for land preparation.

2012 Dryland Cotton Cash Crop Yield

Treatment		Plot Weight (lbs)	Sample Wet Wt (g)	Sample Dry Wt (g)	% Moisture	Seed Cotton	Yield lb/ac*
Dryland Cotton	Mix	25.06	920	570	0.61957	338.20	94.70
Dryland Cotton	Wheat	22.27	1025	700	0.68293	331.28	92.76
Dryland Cotton	Fallow	24.14	1000	675	0.67500	354.93	99.38

*yield based on a 28% gin turnout

N-P-K

Sample ID lbs per acre	Nitrogen	Phosphate	Potassium	Nutrient value per acre
Cotton/Mix	22.37	30.98	529.10	\$222.71
Cotton/Monoculture	22.71	29.10	512.20	\$215.36
Cotton/Tillage	15.11	22.52	429.00	\$176.85
Stika ND	110.43	188.58	469.30	\$379.76

Fertilizer Application

46-0-0

	Needed for 1 bale/ac	Apply (lbs/1/2acre)
Cotton/Mix	50	30.03
Cotton/Monoculture	50	29.66
Cotton/Tillage	50	37.92

Soil Health

Sample ID	Solvita 1-day CO2-C	Organic C	% MAC	Organic N	% Organic N	Organic C:N	Organic N:P	Soil Health Calculation	Cover crop mix
Cotton/Dryland 1	23.50	127.42	18.44	7.45	53.33	17.10	0.65	57.51	40% Legume 60% Grass
Cotton/Dryland 2	18.20	131.23	13.87	5.80	41.88	22.63	0.53	25.67	70% Legume 30% Grass
Cotton/Dryland 3	23.50	132.57	17.73	7.11	51.22	18.65	0.82	48.70	70% Legume 30% Grass
Stika ND	75.70	327.00	23.15	31.25	37.17	10.46	4.44	82.23	20% Legume 80% Grass

Nitrogen

Sample ID all lbs/acre	Total N	Inorganic N	Organic N	Organic N release	Organic N reserve
Cotton/Dryland 1	27.94	13.04	14.90	\$2.93	11.96644253
Cotton/Dryland 2	27.70	16.10	11.60	\$0.00	11.59999962
Cotton/Dryland 3	27.76	13.54	14.22	\$1.12	13.09854568
Stika ND	168.16	105.66	62.50	\$34.58	27.92023865

Flags

Sample ID	Nitrogen	Phosphate
Cotton/Dryland 1	0	0
Cotton/Dryland 2	0	0
Cotton/Dryland 3	0	0
Stika ND	0	High Inorganic P

Phosphate

Sample ID lbs/acre	Total P	Inorganic P	Organic P	Organic P release	Organic P reserve	% P saturation
Cotton/Dryland 1	57.04	30.80	26.24	\$0.19	26.0565745	1.015145302
Cotton/Dryland 2	54.28	29.10	25.19	\$0.00	25.18500175	0.974803805
Cotton/Dryland 3	42.55	22.52	20.03	\$0.00	20.03300009	0.93105185
Stika ND	194.12	177.93	16.19	\$10.65	5.539498138	42.71255112

Study No.: TXPMC-T-1203-CP Summer Cover Crop Demonstration Following Wheat

Objective: Cover crop mixes are becoming increasingly popular. Higher production cost and drought conditions are forcing producers to look at more economical ways to farm. There is also a growing concern for the soil and its ability to continue to meet the world food and clothing needs of the future. Little work has been conducted in respect to implementing a cover crop and no till management practice in the PMC service area. Producers are looking for advice and guidance to transition from heavy tillage management practices to no-till production. The purpose of this demonstration is to show producers how to make the transition to using cover crop mixes. The three management options (cover crop mix, monoculture, and tillage) will allow producers to see how improved soil health can improve the condition of the soil. It will also answer any doubts about nutrient, water, and pest management that many producers are concerned about.

Evaluation Factors: Initial layout of the demonstration did not require an experimental design. The plots were only going to be used for visual side-by-side comparison. More advanced testing and data collection may be conducted within each treatment at a later time. Experimental design will then be determined.

Progress or Status: Initial soil samples were analyzed and cocktail was mixed along with guar for a monoculture in the spring of 2012. Due to below normal rainfall, plots were lost to drought. Wheat cash crop was planted and will be harvested in the spring of 2013.

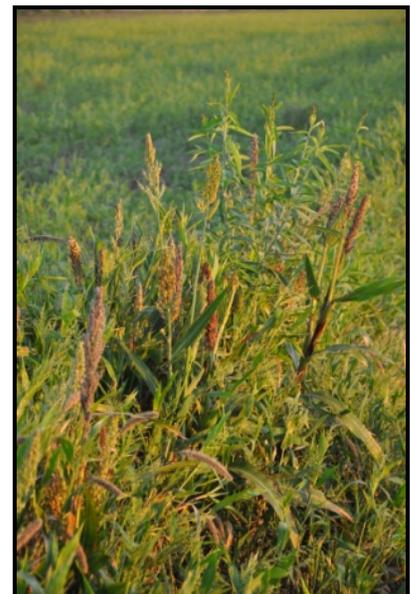
Materials and Methods: Plots will be grown in a manner consistent with a limited irrigated wheat production system. Three different treatments will be planted side-by-side consisting of ½ acre each. (Cover crop mixes, monoculture covers, and tillage management practices). Wheat will be planted with a no till drill at 1 bushel per acre.

Soil samples will be taken annually when cover crops are terminated. The samples will be sent to Temple, TX where Rick Haney will run the soil analysis. Fertilizer will be added to each individual plot to bring fertility up to levels needed to produce a 35 bushel per acre yield. Soil moisture and temperature will also be recorded on each plot. Readings will be taken weekly at the same time of day.

Limited irrigation will be applied in accordance with normal wheat production. Weeds will be controlled either with chemical or by hoeing, depending on the cotton variety planted each year.

A sample of four rows 100 feet long will be combined and weighed. From the combined sample, a grab sample will be taken. The sample should be weighed and air dried. Then the dry weight is recorded so yield can be calculated.

Cover crop mix will be drilled with no-till drill following harvest. Monoculture crop will be no-till drilled following harvest. Tillage will begin following harvest to prevent weed growth and for land preparation.



N-P-K

Sample ID lbs per acre	Nitrogen	Phosphate	Potassium	Nutrient value per acre
Wheat/Dryland 7	12.33	35.60	560.30	\$232.53
Wheat/Dryland 8	16.58	32.44	573.30	\$236.52
Wheat/Dryland 9	9.88	29.00	534.30	\$216.60
Stika ND	110.43	188.58	469.30	\$379.76

Soil Health

Sample ID	Solvita 1-day CO2-C	Organic C	% MAC	Organic N	% Organic N	Organic C:N	Organic N:P	Soil Health Calculation	Cover crop mix
Wheat/Dryland 7	34.90	146.56	23.81	8.72	67.65	16.81	0.71	95.85	40% Legume 60% Grass
Wheat/Dryland 8	31.00	150.62	20.58	9.12	68.37	16.52	0.66	85.20	40% Legume 60% Grass
Wheat/Dryland 9	26.60	111.38	23.88	7.10	69.20	15.69	0.56	105.35	50% Legume 50% Grass
Stika ND	75.70	327.00	23.15	31.25	37.17	10.46	4.44	82.23	20% Legume 80% Grass

Nitrogen

Sample ID all lbs/acre	Total N	Inorganic N	Organic N	Organic N release	Organic N reserve
Wheat/Dryland 7	25.78	8.34	17.44	\$4.87	12.56680563
Wheat/Dryland 8	26.68	8.44	18.24	\$4.78	13.45879047
Wheat/Dryland 9	20.52	6.32	14.20	\$5.20	8.996139545
Stika ND	168.16	105.66	62.50	\$34.58	27.92023865

Flags

Sample ID	Nitrogen	Phosphate
Wheat/Dryland 7	0	0
Wheat/Dryland 8	0	0
Wheat/Dryland 9	0	0
Stika ND	0	High Inorganic P

Phosphate

Sample ID lbs/acre	Total P	Inorganic P	Organic P	Organic P release	Organic P reserve	% P saturation
Wheat/Dryland 7	63.48	35.12	28.36	\$0.48	27.87552223	1.110217214
Wheat/Dryland 8	63.48	31.83	31.65	\$0.61	31.03751658	1.03061986
Wheat/Dryland 9	57.27	28.04	29.23	\$0.96	28.26865571	0.955487311
Stika ND	194.12	177.93	16.19	\$10.65	5.539498138	42.71255112



The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, Large print, audiotope, etc.) should contact USDA's Target Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call 800-795-3272 (voice) or 202-720-6382 (TDD). USDA is an equal opportunity provider and employer.