



East Texas Plant Materials Center

2004 Technical Report

January 2005

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Study Number: ETPMC-P-0054-WL

Study Name: Advanced Evaluation of Beaked panicgrass Accessions

Introduction:

Beaked panicgrass (*Panicum anceps*) is a warm season native perennial. The plant varies in height from 2 to 4 feet. This grass reproduces by seeds, tillers, or short rhizomes. The seed resembles the curved beak of a bird, hence its common name.

Beaked panicgrass is adapted from New York to Kansas and southeastern US. The grass is adapted to moist sandy sites and grows in poorly drained flats, depressions and bottomlands. Conservation uses for beaked panicgrass include revegetation of surface mined lands, timber roads, and other critical erosion sites.

Beaked panicgrass is utilized by wildlife. Cattle also graze on this grass.

Materials and Methods:

Six accessions from Texas and Louisiana are being evaluated.

#9067079 – Smith County, Texas

#9067071 – Grimes County, Texas

#9067094 – Walker County, Texas

#9067121 – Rapides Parish, Louisiana

#28510 – Mississippi PMC

#9067102 – Harrison County, Texas

The plot layout contains three replications with a randomized complete design. Performance dates and seed production were noted. Seed was harvested to estimate seed production for each of the accessions.

Results and Discussion:

This is the final year for advanced evaluation. Spring regrowth was completed in March. Seed development began in June and continued through the summer. Seed was hand harvested from the accession plots during August and September. The accessions that were the best seed producers for 2004 were #9067071, #9067121, and #9067094.

Approximately 200 transplants of #9067102 were planted to enlarge the seed production block for this accession. This particular plant is shorter and smaller than the other accessions. It also has a turf like, semi prostrate growth habit. Because of these attributes, it has been isolated from the other five accessions.

Appendix tables 1 and 2 summarize evaluation information for 2004 performance and seed production.

Study Number: ETPMC-S-0155-WL

Study Name: Seed Increase of Native Warm Season Grasses-a Cooperative Study with the Native Prairies Association of Texas

Introduction:

The East Texas Plant Materials Center is cooperating with the Native Prairies Association of Texas to increase source identified seed sources for future prairie restorations. The East Texas Plant Materials Center is working with eight native species (little bluestem (*Schizachyrium scoparium*), indiagrass (*Sorghastrum nutans*), big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), eastern gamagrass (*Tripsacum dactyloides*), Florida paspalum (*Paspalum floridanum*), gulfcoast muhly (*Muhlenbergia capillaris*), longspike tridens (*Tridens strictus*)). These species were collected from stands in Harris County, Texas. This was the fourth year for seed production.

Results and Discussion:

This year was a good growing season for these plants. The combine was used to harvest most of the grass species. The other species were hand harvested. Gulfcoast muhly was hand harvested on 10/19-20/04. The muhly is a challenge to harvest because of its wiry panicle. The switchgrass seed production block was harvested on 10/06/04. The Florida paspalum was hand harvested on 10/13/04. The paspalum seed was troubled by ergot this year. The indiagrass seed production block performed better this year and was harvested on 10/21/04. The little bluestem was harvested on 10/29/04. Longspike tridens was harvested on 11/05 and 11/08/2004.

Study Number: ETPMC-T-0356-NU

Study Name: Nutrient Uptake of Selected Woody Species

Introduction:

The East Texas Plant Materials Center is cooperating with the Arthur Temple College of Forestry-Stephen F. Austin State University in an agroforestry project. Using fast growing trees in riparian areas provides a filter area to take up phosphorus and other nutrients before they reach water bodies and streams. This project addresses adaptation of six species to high phosphorus levels. The trees will be annually

measured for growth and compared with a control plot to measure response to phosphorus.

Results and Discussion:

Six species of commercially available tree cultivars were purchased from nurseries in Texas, Louisiana, and Oklahoma. These species were cottonwood (*Populus deltoids*), black locust (*Robinia pseudoacacia*), loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), green ash (*Fraxinus pennsylvanica*), and sycamore (*Platanus occidentalis*). The fastest growing tree species in 2004 were the cottonwood, black locust, and sycamore. The diameters of the transplants were measured in February of 2004. Tables 3 and 4 in the Appendix include diameter measurements of the control and high phosphorus plots.

Study Number: ETPMC-S-9947-CR
Study Name: Seed Increase of Deertongue
(Accession #9057334 – Camp County, Texas)

Introduction:

Deertongue (*Dichanthelium clandestinum*) is a perennial native bunchgrass. It is one of thirty-nine species in the genus *Dichanthelium*. It grows to a height of approximately three feet. The growth habit is erect or semi-erect. Plant reproduction is by seed. Deertongue is widely distributed throughout the eastern United States to the Great Plains.

This grass is considered a pioneer plant. Pioneer plants provide initial soil stabilization while allowing other plants to increase on the site. Deertongue is able to grow in pH of 4.0 to 7.5. The plant grows on low fertility sites and is drought tolerant. These characteristics make it a suitable plant for revegetation of surface mined lands and disturbed areas. The East Texas Plant Materials Center service area has many acres of surface mined land and timber lands which would benefit from lower successional species.

Currently, “Tioga” is the only commercially available variety of deertongue. “Tioga” was developed for the northeast and released in 1975. During the initial evaluations “Tioga” did not perform as well as the collections from the East Texas Plant Materials Center service area.

Results and Discussion:

Accession # 9057334 from Camp County, Texas is being developed for use in the East Texas Plant Materials Center service area and possible utilization in the southeastern U.S. In 2004, the seed production plot was harvested on 06/07 with a flail vac. The flail vac worked well for harvesting the seed from the panicles.

Study Number: 59S025D

Study Name: Seed Increase of Crockett select germplasm herbaceous mimosa

Introduction:

Herbaceous mimosa (*Mimosa strigillosa*) is a warm season perennial legume native to the southeastern United States. The plant grows to a height of 6-8". This legume is also a good seed producer. It spreads by stems which root at the nodes and form new plants. Stems can grow up to four feet in length during the growing season. Herbaceous mimosa resembles catclaw sensitive briar (*Schrankia nuttallii*) but does not have thorns. One of the most notable characteristics of the plant is its bright pink bloom, hence another common name of powder puff. The plant prefers full sun and once established is drought tolerant. Herbaceous mimosa is tolerant of lower pH conditions. Germination can occur at pH of 4.1. The optimum pH appears to be between 6.2 and 7.1.

Discussion and Results:

Greenup of the stand was noted on 03/22/04. Seed was harvested on 07/28/04

Study Number: ETPMC-T-0257-CR

Study Name: Herbaceous mimosa Seeding Rates for Roadsides and Critical Areas

Introduction:

This study is a joint effort with the Texas Department of Transportation. The objective of this study was to determine the optimum seeding rate to use on highway right of ways. As noted in the previous study write up, herbaceous mimosa is drought resistant, tolerant of low pH, and low growing. Given these factors, herbaceous mimosa would be good to use for highway revegetation.

Methods and Materials:

On December 12, 2002 six plots measuring 10'x5' were seeded using two seed rates of 10 lbs. or 20 lbs. pls. The plots were hand seeded to simulate broadcast seeding. The plots were raked and tamped to enhance seed to soil contact.

Discussion and Results:

Results for 2004 were disappointing. The plots were evaluated on 06/16/2004. Plants were growing in only two plots out of seven plots.

Study Number: 59S034G

Study Name: Seed/Plant Increase of Eastern gamagrass

Introduction:

Eastern gamagrass (*Tripsacum dactyloides*) is a native perennial warm season grass. This grass is adapted throughout the Great Plains and eastern half of the United States. Eastern gamagrass is a robust rhizomatous plant. It grows on moist soil types except deep sands. Being a warm season grass, this species is dormant during the winter. Eastern gamagrass can be used for forage production, natural area restoration, and vegetative barriers.

Discussion and Results:

The PMC produces two releases for seed increase. 'Jackson' was harvested on 7/07/ 2004. 'Medina' was harvested a week later on 07/13/2004.

Study Number: 59S035G

Study Name: Seed Increase of Harrison select germplasm Florida paspalum

Introduction:

Florida paspalum (*Paspalum floridanum*) is a native warm season grass adapted to the southeastern and Midwestern United States. It averages about 3 to 4 feet tall. The grass is found on moist well drained sandy soils in woods and savannas.

Discussion and Results:

The seed production field was harvested on 07/26/2004.

Study Number: LaPMS-S-0305-TE

Study Name: Coastal Prairie Plant Increase

Introduction:

The Plant Materials Center is cooperating with Scott Edwards, Natural Resources Conservation Service Louisiana Plant Materials Specialist, and Larry Allain, United States Geological Service, to produce seeds of six native coastal plant species (Yellow wild indigo (*Baptisia sphaerocarpa*), eastern beebalm (*Monarda fistulosa*), slender mountain mint (*Pycnanthemum tenuifolium*), compass plant (*Silphium laciniatum*), cluster bushmint (*Hyptis alata*), meadow beauty (*Rhexia mariana*)).

Results and Discussion:

The yellow wild indigo recovered from disease problems in 2003 and produced some seed this year. The eastern beebalm was harvested on 07/27/2004. The eastern beebalm performed well this year. The slender mountain mint was harvested on 10/06/2004. Compass plant produced a small amount of seed this year. The cluster bushmint and meadow beauty did not produce much seed this year. Deer browsed on the plants this summer and ate the cluster bushmint down to the ground in July. Therefore, seed production of cluster bushmint was greatly hampered.

Intercenter Strain Trials

MSPMC-P-0207-WL- Partridge Pea Evaluation

The objective of this trial is to determine the adaptive range of partridge pea (*Chamaecrista fasciculata*) selections of Lark from the Jamie Whitten PMC and Riley Germplasm from the Manhattan Kansas PMC. 'Comanche' was the commercial standard for comparison. The plots were planted on 04/22/2004.

Below are the evaluation scores for the accessions and 'Comanche'

Figure 1 – Evaluation Results

Evaluation	Riley		Lark		Comanche	
	(1)	(2)	(1)	(2)	(1)	(2)
Rep 1 Plant stand	3	3	9	9	3	3
Plant vigor	3	3	3	3	1	1
Seed Production	xx	7	xx	3	xx	2
Est. Seed Maturity	xx	8/10	xx	--	xx	9/14
Rep 2 Plant Stand	9	7	1	1	1	1
Plant vigor	3	3	3	3	1	3
Seed Production	xx	5	xx	1	xx	4
Est. Seed Maturity	xx	--	xx	--	xx	09/12
Rep 3 Plant Stand	3	3	5	5	1	1
Plant vigor	1	1	3	3	1	1
Seed Production	xx	3	xx	5	xx	1
Est. Seed Maturity	xx	--	xx	--	xx	--

A. Visual Observations

(1=Excellent 3=Good 5=Fair 7=Poor 9=Very Poor
0=None)

Plant Materials Center Demonstration Rows

In 2002, a plant materials demonstration plot was established at the Plant Materials Center. Different releases were sent by various Plant Materials Centers. The objective of this plot is to observe and note the adaptation of these perennial plants to east Texas. The performance data for 2004 is in Table 5 of the appendix.

References:

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Table 1 – Performance Dates (ETPMC-P-0054-WL)

Study # ETPMC-P-0054-WL
 Beaked panicum Advanced Evaluation
 Performance Dates-2004

Plot #	Acc #	Origin	Rep	Growth Stage						Foliage			
				Regrowth	Boot	Bloom	Maturity	Dorm.	Mature ht. (cm)	Ht. (cm)	Wth (cm)		
1	9067094	Walker Co., TX	1	3/8	7/12	8/1	8/31	10/15	110	85	115		
2	28510	MS PMC	1	3/11	6/23	7/24	8/9	10/12	100	75	110		
3	9067121	Rapides Par., La	1	3/11	7/14	7/29	8/31	10/22	103	76	90		
4	9067102	Harrison Co., TX	1	3/16	6/20	8/5	10/15	11/18	56	35	53		
5	9067079	Smith Co., TX	1	3/18	7/27	8/12	9/14	11/4	100	78	105		
6	9067071	Grimes Co., TX	1	3/23	8/12		9/28	11/10	97	72	100		
7	9067121	Rapides Par., La	2	3/18	7/9	8/2	8/31	10/28	83	70	74		
8	9067071	Grimes Co., TX	2	3/12	8/1	8/16	9/17	11/4	104	80	100		
9	9067079	Smith Co., TX	2	3/12	7/26		9/28	11/4	108	74	98		
10	9067094	Walker Co., TX	2	3/10	7/14	8/6	9/14	11/4	114	76	105		
11	28510	MS PMC	2	3/23	6/28	7/24	8/17	10/25	110	63	90		
12	9067102	Harrison Co., TX	2		see plot #1 information								
13	9067071	Grimes Co., TX	3	3/10	7/26	8/9	9/17	10/28	107	80	90		
14	9067121	Rapides Par., La	3	3/21	7/13	8/9	9/17	11/4	98	77	70		
15	9067102	Harrison Co., TX	3		see plot #1 information								
16	28510	MS PMC	3	3/18	7/1	7/27	9/17	11/4	105	90	90		
17	9067094	Walker Co., TX	3	3/11	7/7	7/28	8/17	10/25	105	78	88		
18	9067079	Smith Co., TX	3	3/13	7/16	8/12	9/17	10/28	106	83	110		

Table 2 – Seed Production (ETPMC-P-0054-WL)

Study # ETPMC-P-0054-WL
Beaked panicum Advanced
Evaluation
Seed Harvest Totals-2004

Plot #	Acc.	Origin	Rep.	Plants/row	Weight (gr.)
1	9067094	Walker Co., TX	1	10	261
2	28510	MS PMC	1	9	110
3	9067121	Rapides Par., La	1	9	172
5	9067079	Smith Co., TX	1	10	88
6	9067071	Grimes Co., TX	1	11	157
7	9067121	Rapides Par., La	2	7	54
8	9067071	Grimes Co., TX	2	12	220
9	9067079	Smith Co., TX	2	10	48
10	9067094	Walker Co., TX	2	10	196
11	28510	MS PMC	2	9	82
13	9067071	Grimes Co., TX	3	10	137
14	9067121	Rapides Par., La	3	8	123
16	28510	MS PMC	3	10	42
17	9067094	Walker Co., TX	3	8	122
18	9067079	Smith Co., TX	3	10	94
15	9067102	Harrison Co., TX			149

Table 3 – Diameter measurements (in.) and heights (ft.) of Agroforestry control plots. Diameter measurements were taken 2 inches above root collar. (ETPMC – T – 0356 – NU)

Control Plots								
Agroforestry Trees			South End					
Row 1	Tree #	Diam.	Ht.		Tree #	Diam.	Ht.	
Cotton-wood	Plot 1	1	0.50	5.7	Plot 6	1	1.3	8.7
		2	1.03	7.2		2	1.8	9.6
		3	1.30	7.7	Cotton-wood	3	1.13	7.3
		4	Dead	Dead		4	2.3	12.8
		5	1.69	8		5	Dead	Dead
		6	1.29	7.6		6	2.3	11.8
		7	1.40	7.5		7	Dead	Dead
		8	1.76	8.7		8	Dead	Dead
		9	Dead	Dead		9	1.49	7.9
		10	1.59	8.9		10	2.29	11.5
Sweet-gum	Plot 2	1	0.56	2.3	Row 2	1	0.5	2.3
		2	0.49	2.1	Plot 1	2	0.5	1.8
		3	0.49	1.6		3	0.5	1.4
		4	0.56	1.5	Sweet gum	4	0.46	1.7
		5	0.50	1.5		5	0.39	1.5
		6	0.40	1.4		6	0.5	1.3
		7	0.60	2.4		7	0.46	1.6
		8	0.50	1.5		8	0.49	1.6
		9	0.50	1.5		9	0.46	1.5
		10	0.53	1.5		10	0.49	1.4
Pine	Plot 3	1	0.40	1.8	Plot 2	1	1.1	4.6
		2	0.50	2.6		2	1.33	5.6
		3	0.63	2.3	Sycamore	3	0.89	4.9
		4	1.06	3.5		4	1.03	4.4
		5	0.86	3.4		5	1.43	5.4
		6	0.86	2.9		6	1.03	4.3
		7	0.69	2.5		7	0.93	4.2
		8	0.80	2.8		8	1.03	4.8
		9	0.80	2.7		9	1	4.6
		10	0.50	2.3		10	0.93	4.6
cotton-wood	Plot 4	1	1.66	10.2	Plot 3	1	1.69	8.3
		2	Dead	Dead		2	1.29	8.3
		3	1.90	10.6	Black Locust	3	1.79	9.2
		4	1.89	10.7		4	1.73	8.5
		5	1.70	8.3		5	2.1	6.2
		6	1.30	9.4		6	1.86	10.2
		7	1.83	11.5		7	1.86	12.3
		8	2.50	11		8	2.06	11.3
		9	1.80	11.6		9	1.89	10
		10	1.60	8.8		10	1.73	10.3
Plot 5	1	1.36	8	Plot 4	1	0.46	2.1	

green ash	2	1.37	6.9	Sweet gum	2	0.46	1.6
	3	1.20	7		3	0.46	1.9
	4	1.06	6.1		4	0.53	2
	5	1.00	4		5	0.4	1.4
	6	1.19	5.6		6	0.49	1.7
	7	1.09	6.7		7	0.33	1.2
	8	0.86	3.9		8	0.56	2
	9	1.20	6.3		9	0.5	1.9
	10	1.03	6.4		10	0.6	1.3

Control Plots

Agroforestry Trees				South End			
Row 2	Tree #	Diam.	Ht.	Tree #	Diam.	Ht.	
Plot 5 black locust	1	1.30	8.1	Plot 4 Cotton- wood	1	Dead	Dead
	2	1.43	9		2	1.03	4.5
	3	2.50	9.7		3	1.99	10.1
	4	2.19	10.4		4	Dead	Dead
	5	2.06	11.2		5	Dead	Dead
	6	2.30	10.7		6	1.7	9.2
	7	1.76	11.2		7	Dead	Dead
	8	2.43	12		8	1.46	7.5
	9	1.79	10.3		9	1.6	10
	10	2.09	11.1		10	Dead	Dead
Plot 6 Sycamore	1	1.49	7.2	Plot 5 Green ash	1	1.1	7.6
	2	1.49	7		2	0.99	6.9
	3	1.16	5.3		3	1.09	6.9
	4	1.23	6.2		4	0.9	4.6
	5	1.13	5.1		5	1.3	8.1
	6	1.46	6.3		6	1.3	7.7
	7	1.49	8.2		7	1.19	6.2
	8	1.59	7.2		8	1.36	8.5
	9	1.36	6.6		9	1	6.1
	10	1.69	7.5		10	0.79	4.8
Row 3 Plot 1 pine	1	0.49	2.1	Plot 6 Black Locust	1	2.29	10
	2	0.56	2.2		2	1.5	5.9
	3	0.50	2.1		3	1.7	7.6
	4	0.46	2		4	2.09	9.1
	5	0.59	2.4		5	1.8	11
	6	0.66	2.1		6	2.5	12.2
	7	0.70	2.4		7	2	9.6
	8	0.43	2		8	Dead	Dead
	9	0.43	1.9		9	2.89	10.1
	10	0.40	1.9		10	2.83	10.7
Plot 2 green ash	1	0.86	5.8	Row 4 Plot 1 Pine	1	0.66	1.8
	2	0.76	4.7		2	1.06	2.8
	3	0.80	5.5		3	1.09	3.3
	4	0.96	6.6		4	0.76	2.3
	5	0.83	6.3		5	0.79	1.6
	6	0.99	6		6	0.53	1.7
	7	0.80	5		7	0.79	1.9

		8	0.93	5.7		8	0.8	2.5
		9	1.06	4.8		9	0.43	1.6
		10	1.16	6.1		10	0.7	1.7
	Plot 3	1	0.46	1.9	Plot 2	1	Dead	Dead
		2	0.63	2.5		2	Dead	Dead
	pine	3	0.63	2.2	Cotton-	3	1.43	8.9
		4	0.66	2.4	wood	4	0.23	1.5
		5	0.93	3.1		5	1.6	4.7
		6	1.06	4		6	0.76	5
		7	0.53	2.2		7	1.16	6.6
		8	0.70	2.2		8	1	6
		9	0.69	2.3		9	Dead	Dead
		10	0.89	2.9		10	Dead	Dead
Control Plots								
	Agroforestry			South				
	Trees			End				
Row 4	Tree #	Diam.	Ht.		Tree #	Diam.	Ht.	
Plot 3	1	0.53	2					
	2	0.76	2.3					
pine	3	0.70	2.4					
	4	0.66	2					
	5	0.63	2.1					
	6	0.73	2.5					
	7	0.59	2.2					
	8	0.63	2.2					
	9	Dead	Dead					
	10	0.63	2.1					
Plot 4	1	1.80	6.5					
	2	1.50	5.9					
Sycamore	3	1.90	6.4					
	4	1.20	5.3					
	5	1.70	6.2					
	6	1.49	6.1					
	7	1.19	5.4					
	8	1.23	4.8					
	9	1.23	5.7					
	10	1.80	4.1					
Plot 5	1	Dead	Dead					
	2	Dead	Dead					
cotton-	3	Dead	Dead					
wood	4	1.83	7.9					
	5	1.93	10.2					
	6	Dead	Dead					
	7	Dead	Dead					
	8	1.86	9.4					
	9	1.83	10					
	10	Dead	Dead					
Plot 6	1	0.86	2.1					
	2	0.76	2.3					
pine	3	0.53	2					

4	0.73	2.1
5	0.56	2
6	0.66	1.8
7	0.69	2
8	0.70	2.5
9	0.60	1.7
10	0.70	2.2

Table 4 - Diameter and height measurements for Agroforestry high phosphorus plots. (ETPMC – T – 0356 – NU)

High P Plots		Begin measurements at south end of rows						
Agroforestry Trees		Tree						
Row 1	#	Diam.	Ht.	Tree #	Diam.	Ht.		
F e n c e l i n e	Plot 1	1	4.16	11	Plot 6	1	5.03	14.6
		2	Dead	Dead		2	3.43	15.1
	Cotton-	3	Dead	Dead	Cotton-	3	Dead	Dead
	wood	4	3.80	10	wood	4	Dead	Dead
		5	2.43	9.5		5	2.8	13.4
		6	Dead			6	2.06	11
		7	Dead			7	2.99	15.1
		8	2.00	11.1		8	2	11.5
		9	Dead	Dead		9	2.29	11.9
		10	3.24	7		10	1.46	10
	Plot 2	1	3.20	16.1	Plot 7	1	0.7	2.6
		2	2.23	13		2	0.53	2
	Black	3	2.26	13.2		3	0.76	2.5
	Locust	4	2.33	10.6		4	0.73	2.6
		5	2.16	13.3		5	0.46	2
		6	3.76	17.1		6	0.7	2.1
		7	1.76	9.1		7	0.69	2.1
		8	2.13	10.1		8	0.53	1.7
		9	2.66	11.8		9	0.59	1.8
		10	2.90	11.7		10	0.4	1.8
	Plot 3	1	Dead	Dead	Row 2	1	2.46	16.6
		2	2.59	12.2	Plot 1	2	3.39	9.2
	Cotton-	3	2.93	16.1		3	2.56	14.4
	wood	4	2.53	9.6	Black	4	2	11
		5	2.59	13	Locust	5	1.83	11.2
		6	2.40	14.6		6	2.29	10.1
		7	4.69	15.4		7	1.63	10.8
		8	2.63	13.5		8	1.7	9.2
		9	3.49	14.8		9	2.79	9
		10	2.86	13.5		10	2.36	8.8
	Plot 4	1	0.60	2.2	Plot 2	1	1.19	6.6
		2	Dead	Dead		2	0.96	5.3
	Pine	3	0.80	2.2	Green	3	1.2	6.7
		4	0.90	2.6	Ash	4	1.06	7
		5	0.83	2		5	1.03	5.2
		6	1.00	2.4		6	1.19	5.7
		7	1.10	2.8		7	0.83	4.2
		8	0.26	1.1		8	1.1	6.1
		9	Dead	Dead		9	0.83	4.8
		10	0.89	2.2		10	1	7
	Plot 5	1	0.80	2.6	Plot 3	1	1.1	6.6
		2	0.69	2.1		2	0.86	7
	Sweet-	3	0.86	2	Green	3	1.09	7.4
	gum	4	0.90	2.1	Ash	4	1.09	5.7
		5	0.80	2.3		5	1.09	5.3

High P Plots				South End			
Agroforestry Trees							
Row 2	Tree #	Diam.	Ht.	Tree #	Diam.	Ht.	
Plot 4 Sweet-gum	1	0.33	1.1	Plot 2 Cotton-wood	1	1.53	8.8
	2	0.49	1.4		2	1.39	6.9
	3	0.66	2.4		3	1.33	7.6
	4	0.30	0.8		4	1.29	9
	5	0.50	1.6		5	0.56	3.9
	6	0.36	1.3				
	7	0.36	1.4				
	8	0.50	1.6				
	9	0.39	1.4				
	10	0.56	1.8				
Plot 5 Pine	1	0.33	1.6	Plot 3 Sycamore	1	1.29	5.9
	2	0.36	2		2	1.9	8.7
	3	0.59	2		3	2.66	8.4
	4	0.86	2.5		4	2.3	7.1
	5	0.99	3.5		5	1.99	8.2
	6	0.80	2.5		6	1.5	6.1
	7	0.40	1.7		7	2	7.7
	8	0.53	1.7		8	2	7.8
	9	0.53	2.1		9	1.89	8.9
	10	0.33	1.4		10	1.96	8
Plot 6 Pine Blank	1	0.33	1.2	Plot 4 Pine	1	Dead	Dead
	2	0.99	3		2	0.36	1.5
	3	0.86	2.6		3	0.43	1.8
	4	0.86	3		4	0.6	2
	5	0.83	3.3		5	0.7	2.2
	6	0.70	1.9		6	0.73	1.9
	7	0.70	2.4		7	Dead	Dead
	8	0.70	2.7		8	0.66	2.3
	9	0.70	2.1		9	0.93	2.5
	10	Dead	Dead		10	0.59	1.5
Plot 7 Pine	1	0.36	1	Plot 5 Green Ash	1	1.06	4.5
	2	Dead	Dead		2	1.1	7.3
	3	Dead	Dead		3	0.83	4.5
	4	Dead	Dead		4	1.36	6.1
	5	0.56	1.5		5	1.39	7.4
	6	0.56	1.8		6	1.4	7.7
	7	0.50	1.5		7	1.19	7.4
	8	Dead	Dead		8	1.23	6.9
	9	0.80	2.2		9	1.43	7.3
	10	0.60	2.3		10	1.33	5.6
Row 3	1	1.36	7.3	Plot 6	1	2.76	8.3

Plot 1	2	1.33	7.3	Sycamore	2	1.96	8.1
	3	1.03	5.7		3	1.9	7.3
Green	4	1.19	5.4		4	1.8	7.3
Ash	5	1.03	5.5		5	2	8.5
	6	1.13	7.8		6	1.5	6.7
	7	1.23	7.4		7	1.9	8.6
	8	1.23	6.4		8	2.09	8.1
	9	1.16	5.4		9	1.76	8.1
	10	1.29	6.6		10	2	8.7

High P Plots

Agroforestry Trees				South End			
Row	Tree #	Diam.	Ht.	Tree #	Diam.	Ht.	
Row 3							
Plot 7	1	2.49	5	Plot 5	1	1.6	4.2
	2	1.29	6.4		2	0.99	3.9
Cotton-wood	3	1.86	8	Sycamore	3	1.26	5
	4	1.00	5		4	1.16	3.2
	5	1.73	8.7		5	1.8	7.1
	6	1.60	7.1		6	1.4	5.8
	7	1.69	7.1		7	1.56	6.7
	8	1.43	3.9		8	1.63	6.7
	9	2.40	10.8		9	2.33	5.3
	10	2.56	8.8		10	1.1	5.9
Row 4							
Plot 1	1	0.96	3	Plot 6	1	3.3	12.7
	2	1.20	5.8		2	3.98	13.1
	3	1.83	6.2	Cotton-wood	3	2.59	13.4
Sycamore	4	1.19	5.3		4	1.86	9.6
	5	1.30	5.7		5	1.7	8.3
	6	1.26	4.7		6	2.09	8.5
	7	0.99	5.3		7	1.69	10.5
	8	1.29	4.7		8	1.26	4.8
	9	1.43	5.3		9	1.93	9.9
	10	1.33	5.1		10	1.8	9.2
Row 5							
Plot 2	1	1.33	6.6	Plot 7	1	0.9	2
	2	2.73	6.4		2	0.56	1.9
Sycamore	3	1.43	6	Sweet gum	3	0.59	1.6
	4	1.10	5.6		4	0.73	2.3
	5	0.86	4.4		5	0.7	2
	6	2.33	5.1		6	0.76	2.1
	7	1.60	7		7	0.46	2.1
	8	1.23	4.8		8	0.56	1.9
	9	1.49	6.4		9	0.56	1.4
	10	1.49	6.6		10	0.53	1.6
Plot 3	1	0.30	1.5	Row 5	1	0.46	1.8
	2	0.39	1.6	Plot 1	2	0.46	1.5
Pine	3	0.30	1.5		3	0.43	1.7
	4	0.30	1.2	Pine	4	0.5	2.2
	5	0.33	1.2		5	0.46	2
	6	0.29	1.6		6	0.49	1.9
	7	0.26	1.4		7	0.49	2

	8	0.29	1.1		8	0.7	2.5
	9	0.23	1.3		9	0.76	2.6
	10		1.4		10	0.63	2.1
Plot 4	1	0.46	1.3	Plot 2	1	Dead	Dead
	2	0.49	1.3		2	Dead	Dead
Sweet-gum	3	0.50	0.8		3	2.06	9.1
	4	0.53	1.3		4	Dead	Dead
	5	0.59	2.1		5	Dead	Dead
	6	0.29	1.1		6	Dead	Dead
	7	0.40	1.3		7	Dead	Dead
	8	0.60	2		8	Dead	Dead
	9	0.53	1.8		9	Dead	Dead
	10	0.56	1.9		10	1.49	7.6

High P Plots

Agroforestry Trees				South End			
Row	Tree #	Diam.	Ht.	Tree #	Diam.	Ht.	
Plot 3	1	2.63	9.3	Plot 2	1	0.56	2.4
	2	2.10	10.9		2	0.69	2.3
Cotton wood	3	Dead	Dead	Sweet gum	3	0.63	2.1
	4	1.90	9.7		4	0.7	2.2
	5	2.69	10.6		5	0.69	2.3
	6	2.23	12.2		6	0.6	2.2
	7	Dead	Dead		7	0.49	1.5
	8	1.96	9.2		8	0.49	1.5
	9	3.33	10.7		9	0.66	1.7
	10	1.86	11.5		10	0.6	1.6
Plot 4	1	0.39	1.4	Plot 3	1	0.8	4
	2	0.89	2.5		2	Dead	Dead
Pine	3	Dead	Dead	Green Ash	3	0.83	4.2
	4	0.59	2		4	0.79	3.5
	5	0.69	2.2		5	0.93	4.8
	6	Dead	Dead		6	0.8	4.1
	7	0.80	2.8		7	0.7	4.6
	8	0.49	1.9		8	0.83	3.3
	9	0.56	2.1		9	0.83	5.1
	10	0.70	2.2		10	0.66	3.2
Plot 5	1	1.66	8.4	Plot 4	1	1.93	13.4
	2	Dead	Dead		2	5.13	11.3
Cotton wood	3	Dead	Dead	Black Locust	3	2.59	12.3
	4	0.63	3.3		4	1.79	10.2
	5	2.39	14.1		5	2.7	17.3
	6	Dead	Dead		6	2.63	11.7
	7	Dead	Dead		7	2.53	16.2
	8	Dead	Dead		8	2.2	13.9
	9	Dead	Dead		9	2	10.7
	10	Dead	Dead		10	3.99	13.1
Plot 6	1	Dead	Dead	Plot 5	1	0.43	2
	2	1.06	5.7		2	0.49	2.2
Cotton	3	Dead	Dead	Pine	3	0.43	1.8

wood	4	Dead	Dead	4	0.6	2.4		
	5	Dead	Dead	5	0.63	2.1		
	6	Dead	Dead	6	0.86	2.9		
	7	Dead	Dead	7	0.6	2.4		
	8	Dead	Dead	8	0.96	2.9		
	9	1.09	4.8	9	0.69	2.3		
	10	1.26	6.1	10	0.6	2.4		
	Row 6	1	2.26	10.3	Plot 6	1	2.43	9.8
	Plot 1	2	2.09	10.3		2	Dead	Dead
		3	2.40	10.5	Black	3	3.5	11.2
	4	1.16	7.8	Locust	4	0.53	8.4	
	5	2.09	13.7		5	0.5	5.6	
	6	1.40	8.1		6	3.2	7.1	
	7	2.99	11.5		7	2.7	15	
	8	1.99	14.2		8	1.5	11.1	
	9	2.73	10		9	3.23	15	
	10	2.63	13.4		10	2.66	11.8	

**Table 5 - Florida paspalum seeding rate study (Accession #9043874)
(ETPMC – T – 0359 – WL)**

Florida paspalum Seed
Study Count

9/9/2004

Rep. 1				Total	Avg. Plants /sq.ft.	Rep. 2				Total	Avg. Plants/sq. ft.
Row	1	2	3			Row	1	2	3		
Plot A Rate 1	1	8	18	27	2.3	Plot F Rate 4	11	14	7	32	2.7
Plot B Rate 5	8	2	4	14	1.2	Plot G Rate 1	2	6	8	16	1.3
Plot C Rate 3	18	17	32	67	5.6	Plot H Rate 2	11	11	14	36	3
Plot D Rate 4	20	0	14	34	2.8	Plot I Rate 5	5	4	9	18	1.5
Plot E Rate 2	8	16	19	43	3.6	Plot J Rate 3	0	3	39	42	3.5

Rep. 3				Total	Avg. Plants/sq.ft
Row	1	2	3		
Plot K Rate 5	1	10	19	30	2.5
Plot L Rate 3	5	11	17	33	2.8
Plot M Rate 4	6	10	18	34	2.8
Plot N Rate 2	16	10	3	29	2.4
Plot O Rate 1	1	2	2	5	0.4

**Table 6- Herbaceous mimosa seeding rate study (PI #548994)
(ETPMC – T – 0462 – CR)**

Herbaceous mimosa seeding study 9/9/2004
First year data

Rep. 1				Total	Avg. Plants /sq.ft.	Rep. 2				Total	Avg. Plants/sq. ft.
Row	1	2	3			Row	1	2	3		
Plot A Rate 4	1	8	10	19	1.6	Plot F Rate 1	0	5	3	8	0.7
Plot B Rate 3	1	5	8	14	1.2	Plot G Rate 2	6	7	5	18	1.5
Plot C Rate 5	9	12	12	33	2.8	Plot H Rate 4	4	5	9	18	1.5
Plot D Rate 2	7	5	7	19	1.6	Plot I Rate 5	11	11	10	32	2.7
Plot E Rate 1	6	5	6	17	1.4	Plot J Rate 3	7	6	8	21	1.8

Rep. 3				Total	Avg. Plants/sq.ft
Row	1	2	3		
Plot K Rate 5	1	5	16	22	1.8
Plot L Rate 2	10	7	6	23	1.9
Plot M Rate 4	9	7	9	25	2.1
Plot N Rate 1	4	7	5	16	1.3
Plot O Rate 3	14	12	9	35	2.9

Table 7 – Performance dates for Releases from other Plant Materials Centers

Demonstration Rows from other PMC's
2004

Species	Cultivar	Regrowth	Foliage Height (cm)	Foliage Width (cm)	Boot	Bloom	Seed Maturity	Mature Height (cm)	Dormancy
Little bluestem	Aldous	3/28	46	46	8/10	8/16	10/7	93	10/15
	Cimmarron	3/22	50	38	7/24	8/16	10/5	92	10/18
	Knox City	3/18	66	37	7/20	8/31	9/28	117	10/12
Big bluestem	Kaw	3/18	70	50	7/8	8/6	9/8	140	10/18
Indiangrass	Lometa	3/10	70	85	9/8		10/12	160	11/15
	Cheyenne	3/24	75	90	7/8	8/16	9/24	170	11/15
	Osage	3/18	90	64	8/6	8/25	9/28	180	10/8
	Rumsey	3/10	130	80	8/6	8/20	9/28	200	10/28
Switchgrass	PI514673	3/8	140	90	9/20	10/5		210	10/28
	Alamo	2/28	160	220	6/28	8/5	9/9	220	11/15
	Kanlow	3/12	160	180	6/22	8/6	8/31	230	10/18
	Blackwell	3/18			5/16	5/27	7/1	143	10/3
	Shawnee Cave in Rock	3/20	110	90	5/12		7/3	160	10/13
Green spangletop Eastern gamagrass	Van Horn	3/18	120	90	5/9	5/27	7/3	150	10/18
	Pete	3/6	90	30	5/9	6/8	6/25	128	9/20
		3/5	88	135	4/20	5/10	6/20		11/12

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