

Replicated Late Planted Transgenic Cotton Variety Demonstration Under LEPA Irrigation (Field 5A) Randy Boman, Mark Kelley, Mark Stelter, Doug Nesmith, James P. Bordovsky, Danny Carmichael, and John Everitt

Objective: The objective of this project was to compare yields, gin turnout, fiber quality and economics of variety and technology selection under late planting situations.

Methodology: Sixteen varieties were planted on 21-Jun in 30-inch rows at a rate of 3.3 seed/ row-ft using a John Deere Max Emerge II vacuum planter. A randomized complete block design with three replications was utilized. LEPA irrigation was applied at 2.05 inches during the growing season. A total of 10.74 inches of rainfall accumulated between June and September, 2005. Normal cultural practices were followed and pests were controlled as necessary using thresholds. Ginning costs were based on \$2.45 per cwt of bur cotton and seed value was based on \$100/ton. This does not include check off. Systems costs/acre were determined by variety using manufacturer’s suggested retail price for seed, and appropriate technology fees for Bollgard and Roundup Ready based on 3.3 seed/ row-ft. Net value was determined by subtracting ginning and systems costs from the total value.

Results and Discussion: These results indicate that variety can selection significantly impact net value/acre (Table 1). Lint turnout ranged from 17.5% for Beltwide Cotton Genetics 50R to 21.8% for FiberMax 5045BR. Lint yields varied from a low of 310 lb/acre (Americot 262R) to a high of 580 lb/acre (FiberMax 5045BR). Lint loan values ranged from a low of \$0.4362/lb to a high of \$0.5037/lb for FiberMax 5045BR and AFD 351 1R, respectively (a result of very low micronaire, with the test average at 2.5). After adding lint and seed value, total value/acre ranged from a low of \$168.43 for Americot 262R, to a high of \$311.84 for Paymaster 2280BG/RR. When subtracting ginning costs and seed and technology fees, the net value/acre among varieties ranged from a high of \$206.99 (Paymaster 2280BG/RR) to a low of \$90.37 (Deltapine 432RR), a difference of \$116.62. Although low yield and poor fiber quality are typically encountered when late planting, these data indicate that substantial differences can be obtained in terms of net value/acre due to variety and technology selection. Additional multi-site and multi-year applied research is needed to evaluate varieties across a series of environments.

Table 1. Harvest results from the irrigated large plot replicated late planted transgenic variety demonstration, Texas Agricultural Experiment Station, Halfway Helms Farm, Halfway, TX, 2005.

Variety	Lint turnout %	Seed turnout %	Bur cotton yield lb/acre	Lint yield lb/acre	Seed yield lb/acre	Lint loan value \$/lb	Lint value \$/acre	Seed value \$/acre	Total value \$/acre	Ginning cost \$/acre	Seed/Tech cost \$/acre	Net value \$/acre	
PM 2280BG/RR	20.9	41.3	2557	536	1055	0.4837	259.07	52.77	311.84	62.64	42.21	206.99	a
FM 5045BR	21.8	39.9	2657	580	1059	0.4362	252.86	52.97	305.83	65.10	42.74	197.99	ab
PM 2145RR	20.9	38.2	2204	461	841	0.4813	221.93	42.04	263.96	54.00	29.80	180.17	bc
ST NG 2448R	19.3	37.8	2200	426	831	0.4947	209.66	41.55	251.20	53.91	32.83	164.47	cd
ST NG 1553R	20.3	40.0	2053	417	822	0.4895	203.90	41.09	244.99	50.30	32.83	161.88	cd
All-Tex Xpress RR	20.2	41.7	2055	415	856	0.4740	196.72	42.82	239.54	50.34	27.68	161.51	cd
PM 2167RR	21.7	38.9	2062	447	802	0.4398	196.67	40.09	236.76	50.52	29.80	156.44	cde
Americot 427R	18.8	36.9	2142	402	790	0.4553	183.28	39.47	222.75	52.48	28.04	142.23	def
All-Tex Excess RR	19.3	39.4	1907	367	751	0.4700	172.51	37.54	210.05	46.73	27.68	135.64	ef
PM 2266RR	18.6	39.7	1960	364	778	0.4777	174.10	38.91	213.00	48.02	29.80	135.18	ef
AFD 351 1R	19.6	43.7	1678	329	733	0.5037	164.98	36.68	201.66	41.11	29.75	130.80	f
DP 444BG/RR	18.2	32.1	2348	428	753	0.4527	193.61	37.67	231.28	57.51	53.35	120.41	fg
BCG 50R	17.5	39.1	1834	321	718	0.4497	144.50	35.89	180.40	44.93	33.23	102.24	gh
DP 445BG/RR	19.8	34.7	1906	377	661	0.4483	168.83	33.08	201.90	46.70	53.35	101.85	gh
Americot 262R	18.0	36.0	1718	310	618	0.4430	137.51	30.91	168.43	42.08	28.83	97.51	gh
DP 432RR	17.7	33.8	1889	333	638	0.4428	147.65	31.90	179.55	46.29	42.89	90.37	h
Test avg.	19.5	38.3	2073	407	794	0.4651	189.24	39.71	228.95	50.79	35.30	142.85	
CV, %	7.7	6.4	6.4	6.2	6.5	4.4	8.0	6.5	7.5	6.4	---	10.2	
OSL	0.0181	0.0002	<0.0001	<0.0001	<0.0001	0.0024	<0.0001	<0.0001	<0.0001	<0.0001	---	<0.0001	
LSD 0.05	2.5	4.1	220	42	86	0.0342	25.10	4.29	28.74	5.39	---	24.21	