



**Replication Plant Growth Regulator Performance on Cotton Demonstration,
Seminole, TX - 2009**

Cooperator: Michael Todd

**Manda Cattaneo, Scott Russell, Mark Kelley, and Randy Boman,
EA-IPM Gaines County, EA-IPM Terry and Yoakum Counties, Extension Program
Specialist II - Cotton, and Extension Agronomist - Cotton**

Gaines County

Summary: No significant differences were observed for all yield, economic, and HVI fiber quality parameters measured (Tables 1 and 2). These data indicate that substantial differences are not obtained in terms of net value/acre due to plant growth regulator selection.

Objective: The objective of this project was to evaluate the performance of commercially available plant growth regulators (PGR) on a medium to tall cotton variety, FiberMax 9160B2F, in Gaines County.

Materials and Methods:

Treatments: 4 fl oz of Mepex, 4 fl oz of Mepex GinOut, 4 fl oz of Pentia, 2 fl oz of Stance

Soil Texture and pH: 84% sand, 5% silt, and 11% clay; pH of 7.8

Experimental design: Randomized complete block with 3 replications

Seeding rate: 3.5 seeds/row-ft in 38-inch row spacing

Plot size: 8 rows by variable length of field (552 - 1115 ft long)

Planting date: 15 May in terminated wheat

Irrigation: This location was under a LESA center pivot

Irrigation & Rainfall: Pre-bloom irrigation and rainfall totaled ~9.81 inches
Bloom to harvest rainfall totaled ~10.80 inches

Weed Management:	½ pt per acre Treflan banded on pre-plant and three application of Roundup in-season
Insecticides:	3 oz of Orthene applied early season
Fertilizer Management:	15 gallons of 10-34-0 preplant and 30 gallons of 28-0-0-5 in-season
Harvest Aides:	2 pts of Prep and 1 1/4 pt of Def
PGR applicaation:	The PGRs were applied on 7 July with flat fan nozzles and a spry volume of 10.4 gallons per acre.
Plant Mapping Results:	Plant height, number of nodes, and Nodes Above White Flower (NAWF) were counted on ten plants per plot on 24 July. There was no significant difference between treatments for these measurements.
Harvest:	Plots were harvested on 11-November using a commercial stripper harvester with field cleaner. Harvested material was transferred to a weigh wagon with integral electronic scales to determine individual plot weights. Plot yields were subsequently adjusted to lb/acre.
Gin turnout:	Grab samples were taken by plot and ginned at the Texas AgriLife Research and Extension Center at Lubbock to determine gin turnouts.
Fiber analysis:	Lint samples were submitted to the Texas Tech University - Fiber and Biopolymer Research Institute for HVI analysis, and USDA Commodity Credit Corporation (CCC) loan values were determined for each variety by plot.
Ginning cost and seed values:	Ginning costs were based on \$3.00 per cwt. of bur cotton and seed value/acre was based on \$160/ton. Ginning costs did not include checkoff.
Seed and technology fees:	Seed and technology costs were calculated using the appropriate seeding rate (3.0 seed/row-ft) for the 40-inch row spacing and entries using the online Plains Cotton Growers Seed Cost Comparison Worksheet available at: http://www.plainscotton.org/Seed/PCGseed10.xls .

Results and Discussion:

No significant differences were observed for all yield, economic, and HVI fiber quality parameters measured (Tables 1 and 2). These data indicate that substantial differences are not obtained in terms of net value/acre due to plant growth regulator selection. It should be noted that no inclement weather was encountered at this location prior to harvest and therefore, no pre-harvest losses were observed. Additional multi-site and multi-year applied research is needed to evaluate varieties and technology across a series of environments.

Acknowledgments:

Appreciation is expressed to Michael Todd for the use of his land, equipment and labor for this demonstration. Further assistance with this project was provided by the Fiber and Biopolymer Research Institute, Texas Tech University. Furthermore, we greatly appreciate the Texas Department of Agriculture - Food and Fiber Research for funding of HVI testing.

Disclaimer Clause:

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1. Harvest results from the replicated plant growth regulator cotton demonstration, Michael Todd Farms, Seminole, TX, 2009.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Net value
	----- % -----		----- lb/acre -----			\$/lb			----- \$/acre -----		
Mepex	34.0	50.2	3758	1279	1884	0.5662	724.35	188.42	912.77	112.73	800.04
Mepex_GinOut	33.9	49.6	3741	1271	1859	0.5605	712.30	185.84	898.15	112.23	785.92
Pentia	33.4	48.2	3671	1225	1768	0.5615	687.82	176.79	864.62	110.15	754.46
Stance	32.8	50.9	3636	1194	1849	0.5637	672.56	184.90	857.45	109.07	748.38
Untreated	32.7	49.3	3623	1184	1788	0.5662	670.24	178.84	849.09	108.70	740.38
CV, %	4.2	2.7	2.9	5.2	3.7	1.0	5.7	3.7	5.2	2.9	5.7
OSL	0.6885	0.2299	0.4647	0.3310	0.2766	0.6652	0.4174	0.2766	0.4222	0.4666	0.4482
LSD	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.05 level, NS - not significant.

Note: some columns may not add up due to rounding error.

Assumes:

\$3.00/cwt ginning cost.

\$160/ton for seed.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Table 2. HVI fiber property results from the replicated plant growth regulator cotton demonstration, Michael Todd Farms, Seminole, TX, 2009.

Entry	Micronaire	Staple	Uniformity	Strength	Elongation	Leaf	Rd	+b	Color grade	
	units	32 ^{nds} inches	%	g/tex	%	grade	reflectance	yellowness	color 1	color 2
Mepex	3.6	37.0	81.2	29.6	7.0	2.3	82.8	6.6	2.3	1.0
Mepex GinOut	3.6	36.8	81.9	29.9	7.0	1.7	82.5	6.6	3.0	1.0
Pentia	3.7	36.4	81.0	29.2	6.9	2.7	82.2	6.7	3.0	1.0
Stance	3.8	36.5	81.4	29.0	6.8	2.7	82.0	6.9	2.7	1.0
Untreated	3.7	36.7	81.3	29.4	7.0	2.3	82.6	6.7	2.7	1.0
CV, %	3.6	1.0	1.1	0.6	3.3	27.1	0.8	3.6	--	--
OSL	0.3815	0.3688	0.3442	0.3189	0.6303	0.3640	0.5897	0.4722	--	--
LSD	NS	NS	NS	NS	NS	NS	NS	NS	--	--

CV - coefficient of variation.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.05 level, † indicates significance at the 0.10 level, NS - not significant.