

A green cotton harvester is shown from a rear perspective, moving through a field of cotton. The machine is large and complex, with various mechanical parts visible. The cotton plants are in full bloom, with white cotton bolls ready for harvest. The background shows a flat, open landscape under a clear sky.

# 2003 SOUTHWEST OKLAHOMA ENTOMOLOGY REPORT

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# Entomology Activities

Insect monitoring is a key component in a successful IPM program. Trapping activities in 2003 was restricted to Southwest Oklahoma. Trapping activities centered on the beet armyworm and the bollworm complex. Population trends, insect updates, and control tips are published in the Cotton Sentry and distributed to the state's cotton producers and consultants to help formulate management strategies to enhance profitability.

Like 2002, Bollgard™ technology was the focus of this year's research. Monetary support received throughout the year permitted this applied research to continue. Besides State IPM funds, I want to thank all the chemical companies for their contract research support. Special thanks go to the cotton producers for their support as cooperators and support through the Cotton Incorporated State Support Funds. Special recognition is in order for the help A.L. Hutson, retired Extension Economist, provided analyzing and preparing the Bollgard™ economic assessment.

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# Oklahoma Cotton Insect Report 2003

**Oklahoma.** A total of 166,000 acres were planted. Poor growing conditions throughout June slowed plant development and jeopardized stands across the state. A cooler than normal summer reduced heat unit accumulations by 136 units (May 1<sup>st</sup> to October 1<sup>st</sup>). However sufficient heat units occurred to produce a full crop. The state's production average is projected at 630 lbs. of lint per acre.

Despite widespread use of at-planting insecticides, thrips infestations built to damaging levels across the state. Cotton fleahopper infestations were widespread requiring many fields to receive two insecticide applications to prevent significant yield loss.

Bt cotton continues to be very popular in Oklahoma. Bt cotton represented 40% of the cotton acreage in 2003. Bollworm pressure was spotty emphasizing the importance of scouting. Conventional cotton received 1 or 2 insecticide applications to prevent worm damage. Populations spilled over into Bt cotton requiring over-sprays in approximately 15% of the fields.

## Ongoing Research Projects

**Oklahoma.** Several Bt cotton trials were conducted in 2003 to further evaluate the value of this technology under Oklahoma conditions. Since 1996, Bt cotton provided sufficient bollworm control and increased yields to compensate for rental fees under irrigation. During this 8-year period relying on the Bt technology enhanced profits by \$48.38 per acre annually. For the fourth straight year Bt stripper variety yields failed to compensate for rental fees under dryland conditions.

This was the eighth year that Heliathine infestations failed to reach levels in economic threshold trials to activate insecticide applications. Heliathine pressure remained below 5 larvae (> 3/8 inch long) per 100 terminals. Insecticide protection was planned if infestations approached 10 larvae (> 3/8 inch long) per 100 terminals. Biweekly tagging of eggs and newly hatched larvae revealed no Heliathine survival on tagged plants. All newly hatched larvae died before any of the larvae reached 1/2 inch long

Research continued in 2003 to determine the impact of planting date on boll weevil management grown under dryland conditions. Previous research during years with high boll weevil survival indicates planting date is critical regardless of management scheme to raise profitable cotton. Yields favored May-planted cotton. Yields in neither planting, regardless of treatment regime, were not profitable due to the prolonged drought.

Nodes Above White Flower (NAWF4) is a reliable method to determine the last cohort of bolls that will contribute significantly to yield and accurate termination of scouting activities. This was the last year of a three-year study to see if the absence of late-season boll weevil infestations enhanced the value of the top crop. Despite the lack of late-season infestations of boll weevils, no change in the value or the last cohort of bolls that contribute to yield was detected during this study.

# Bollworm / Tobacco Budworm and Beet Armyworm Monitoring

Bollworms/tobacco budworms are targets of many of the insecticide applications applied annually to cotton in Oklahoma. Monitoring moth activities helps determine species ratio and peak ovipositional activity for these insects. Traps were located near these farming communities – Altus, Hollis and Tipton. In addition to Heliothine activity, beet armyworm movements were also monitored at each location. Traps were maintained between June 1 and September 1, 2003.

## Moth Pheromone Trap Catch Totals for Selected Regions of Oklahoma, Summer 2003.

<b>Bollworm</b>		
<u>Altus</u> 244	<u>Hollis</u> 2,361	<u>Tipton</u> 369
<b>Tobacco Budworm</b>		
<u>Altus</u> 140	<u>Hollis</u> 265	<u>Tipton</u> 198
<b>Beet Armyworm</b>		
<u>Altus</u> 244	<u>Hollis</u> 461	<u>Tipton</u> 268

Although both species do coexist and are considered the same, this species ratio is important since tobacco budworms exhibit a higher level of resistance to insecticides than bollworms. It is extremely important to detect fluctuations in species ratio of each ovipositional period and adjust insecticide recommendations accordingly. A total of 3,577 moths were captured between the week of June 1 and September 1. Bollworms comprised 83.1% of the total catch in 2003 (Figure 1).



Figure 1. Species composition of moths trapped across Oklahoma, Summer 2003.

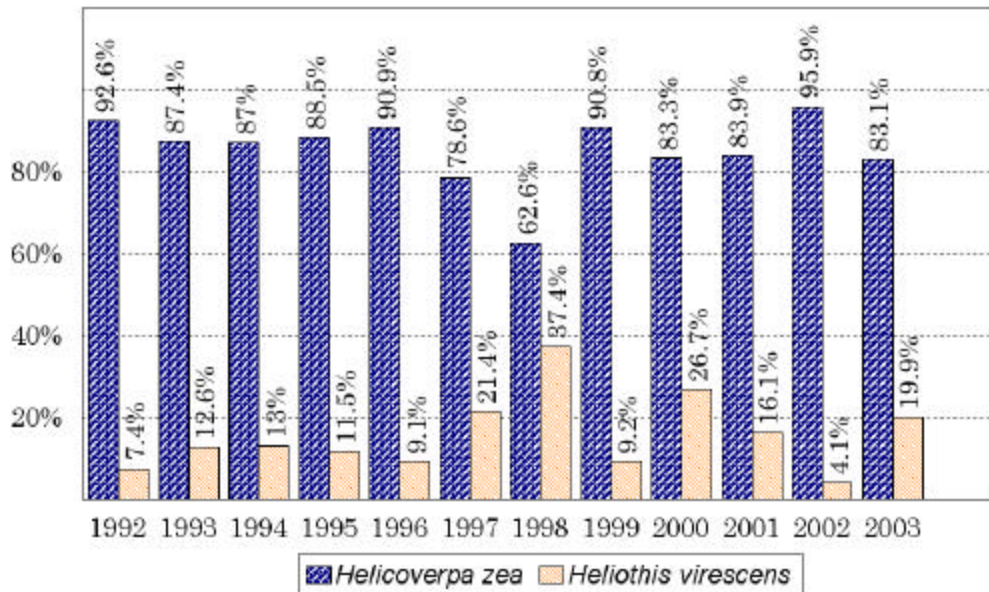
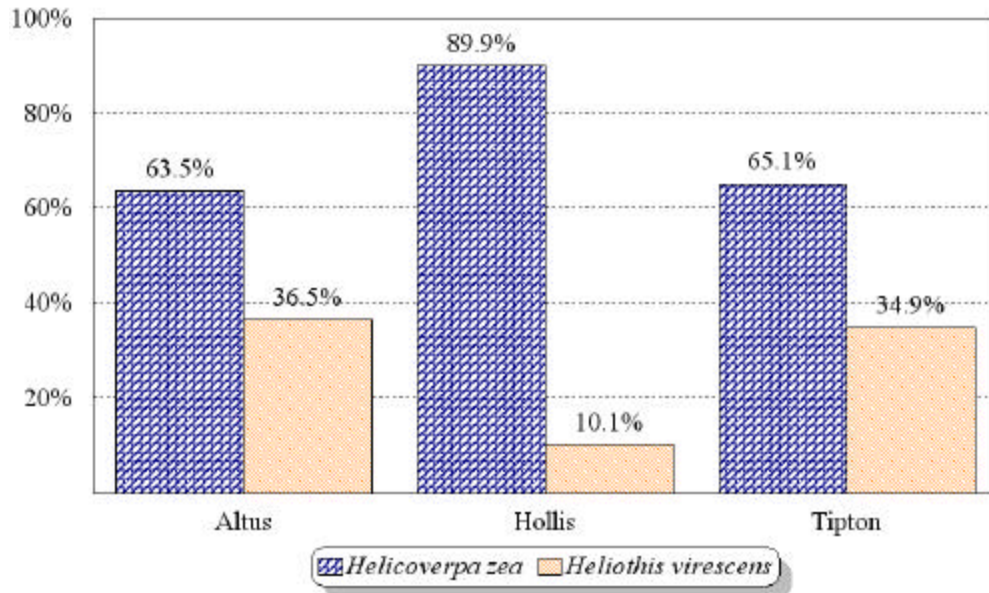


Figure 2. Species composition of trapped moths by production region, 2003.

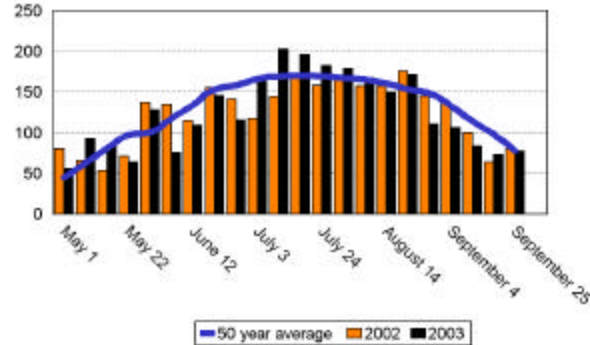


# Growing Degree Days Accumulation For Select Locations Across Oklahoma, Summer 2003.

## ALTUS

Growing Degree Days (GDD)

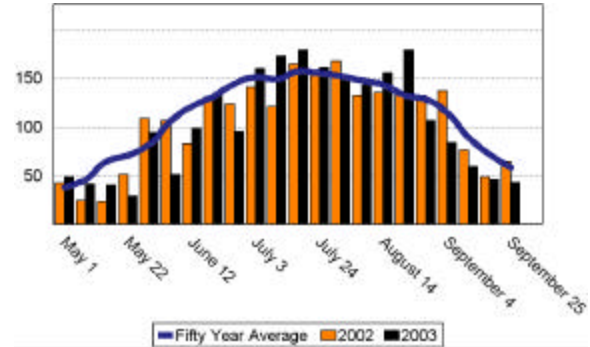
	50 year	2002	2003
May	397.0	370.6	382.3
June	570.5	545.4	499.8
July	846.7	754.7	772.3
August	628.2	635.0	715.6
September	423.6	379.2	360.2
<b>Total</b>	<b>2,866.0</b>	<b>2,684.9</b>	<b>2,730.2</b>



## BLACKWELL

Growing Degree Days (GDD)

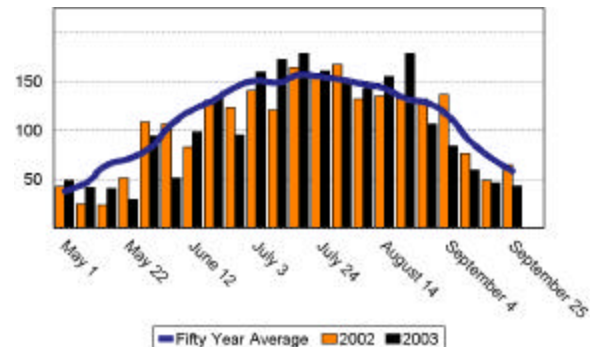
	50 year	2002	2003
May	312.0	257.9	166.7
June	510.0	441.9	383.4
July	767.0	746.7	715.4
August	550.0	533.6	671.6
September	333.0	325.4	344.8
<b>Total</b>	<b>2,472.0</b>	<b>2,305.5</b>	<b>2,281.9</b>



## HOBART

Growing Degree Days (GDD)

	50 year	2002	2003
May	351.9	306.0	306.8
June	559.0	496.9	432.6
July	812.3	743.6	745.2
August	596.4	634.8	727.3
September	437.5	342.2	356.1
<b>Total</b>	<b>2,757.1</b>	<b>2,523.5</b>	<b>2,568.0</b>



# Economic Value of Bt Transgenic Cotton

Each year economic budgets and cost analysis are prepared to determine the value of Bt transgenic varieties and conventional varieties. These comparisons lumped varieties into two groups (Bt and conventional) regardless of maturity, variety type, or spray regime. Regardless of the management scheme or insect pressure Bt transgenic cotton yielded the best and increased profitability (return per acre) throughout the 8 year period 1996 – 2003. Growing Bollgard™ varieties was worth \$ 190.82 per acre. Since its introduction in 1996 this research indicates that the value of investing in Bt transgenic technology between 1996 – 2003 (Table 2) was \$ 48.38 per acre (weighted average) or \$ 19,313,876 (Bollgard acreage = 399,212 acres for 8 years).

## Irrigated Bollgard™ Cotton Cost Comparison - 2003<sup>1</sup> A.L. Hutson

		Bollgard™		Conventional
<u>Return</u>				
Cotton	1,358#	\$882.70	901#	\$585.65
<u>Operating Inputs</u>				
Seed	13# @ 1.50	\$ 19.50		\$19.50
Bt Cost		45.02		---
Hoeing		15.00		15.00
Herbicide		16.00		16.00
Nitrogen		25.54		25.54
Phosphorous		6.00		6.00
Ginning		40.74		27.03
Harvest Aid		18.75		18.75
Spraying <sup>2</sup>		24.50		24.50
Crop Insurance		22.00		22.00
Custom Harvest		122.22		81.09
Labor		25.75		25.75
Fuel, Lube & Repair		28.00		28.00
Boll Weevil		21.08		16.51
Irrigation		45.00		45.00
Operating Interest		10.01		8.21
Total Operating Cost		<u>\$485.11</u>		<u>\$378.88</u>
Return to Land, overhead, Risk & Management		<u>\$397.59</u>		<u>\$206.77</u>

<sup>1</sup> Based on 25 replicated tests



# Irrigated Bollgard™ Cotton Cost Comparison – 1996-03

## A.L. Hutson

		Bollgard™		Conventional
<u>Return</u>				
Cotton @ \$.575	1,147#	\$ 630.85	929#	\$ 510.95
<u>Operating Inputs</u>				
Seed	13# @ 1.50	\$ 19.50		\$ 19.50
Bt Cost <sup>2</sup>		45.02		---
Hoeing		15.00		15.00
Herbicide		16.00		16.00
Nitrogen		24.88		24.88
Phosphorous		6.00		6.00
Ginning		34.41		27.87
Harvest Aid		43.20		43.20
Spraying		19.80		23.30
Crop Insurance		22.00		22.00
Custom Harvest		103.23		83.61
Labor		25.75		25.75
Fuel, Lube & Repair		28.00		28.00
Boll Weevil		18.97		16.79
Irrigation		45.00		45.00
Operating Interest		9.80		8.14
Total Operating Cost		<u>\$ 476.56</u>		<u>\$ 405.04</u>
Return to Land, overhead, Risk & Management		<u>\$154.29</u>		<u>\$ 105.91</u>

<sup>1</sup> Based on 8 years of replicated data for 122 trials.

# Bollgard™ Variety Demonstration 2003

Cooperator: Terry White

Location: Harmon County

Planting Date: May 23, 2003

Seeding Rate: 12.9 lbs/acre

Heat units accumulated: 2,417

Five Irrigations: July 8, July 19, July 29, August 6, and August 18

## Pesticide Usage:

Roundup (1 qt / acre) over-the-top application + Orthene 0.36 lbs ai / acre June 17

Vydate .125 lbs ai / acre + Pix (3 oz) aerially applied July 2

Vydate .25 lbs ai / acre aerially applied + Pix (12 oz) aerially applied July 15

## Harvest Aid applied:

Finish (16 oz / acre) + Prep (21 oz / acre) October 9

Table 1. Stand Densities, Retention Rates, and Lint Production White's Farm - Summer 2003.

<u>Variety</u> <u>(2002 yield ranking)<sup>1</sup></u>	<u>Stand density</u> <u>plants/acre</u>	<u>% Retention</u>		<u>Lint Yield</u>
		<u>July 28</u>	<u>Aug 11</u>	<u>October 20</u>
DP 555 BG/RR (8)	32,000	92.0	92.0	1,807
SV 4892 BR with Cruiser (-)	32,000	95.0	92.0	1,781
DP 655 BG/RR (3)	36,000	91.0	89.0	1,696
DP 424 BG II/RR (-)	36,000	93.0	89.0	1,652
FM 989 B/RR (4)	34,000	91.0	90.0	1,652
DP 449 BG/RR (5)	31,000	96.0	90.0	1,564
SV 4892 BR (1)	37,000	93.0	89.0	1,506
SV 3539 BR (-)	33,000	96.0	90.0	1,440
SG 215 BG/RR (2)	37,000	93.0	88.0	1,361
SV 5599 BR (-)	32,000	93.0	89.0	1,361
PM 2280 BG/RR (9)	36,000	89.0	88.0	1,279
DP 468 BG II/RR (-)	34,000	92.0	91.0	1,279
SV 2454 RR (-)	34,000	93.0	88.0	1,157

<sup>1</sup> (-) indicates the variety was not included in 2002 variety demonstration featuring 10 cotton varieties.

## Trial Comments:

Thrips and cotton fleahoppers were the only insect pests that required insecticidal control to prevent economic loss in 2003. DP 555 BG/RR produced 1,807 lbs lint per acre. All Bollgard™ varieties produced greater yields than SV 2454 RR (1,157 lbs) to compensate for the technology rental fee.

# Bollworm Economic Threshold Study – Bollgard™ Cotton

Insect Code	Stand Count	Bollworm Eggs	Bollworm Larvae	Bollworm Damage Squares	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower
Rating Unit	/acre	/10 Plants	/10 Plants	/10 Plants	/5 Plants	/10 Plants	/10 Plants
Rating Date	June 23	August 4	August 4	August 4	August 4	August 4	August 4
Treatment							
PM 2326BG/RR	31000.0	0.0	0.0 b	0.0 b	9.07	90.0 ab	4.87
DP 237B	32333.3	0.0	0.0 b	0.0 b	8.73	88.3 ab	4.67
NuCOTN 33B	33666.7	0.0	0.0 b	0.0 b	9.40	91.0 ab	5.07
PM 2280 BG/RR	31666.7	0.0	0.0 b	0.0 b	9.20	89.7 ab	5.33
PM 280	27666.7	0.0	0.7ab	1.0 ab	9.27	91.7 a	5.33
PM HS-26	33000.0	0.0	0.7ab	1.0 ab	9.07	91.0 ab	5.20
DP 2379	35000.0	0.0	1.3a	2.3 a	9.27	85.7 b	5.07
DP 5415	31000.0	0.0	0.7ab	1.0 ab	9.00	90.0 ab	5.07
LSD (P=.05)	3795.47	0.00	0.71	1.15	0.819	3.63	0.766
Standard Deviation	2167.12	0.00	0.41	0.66	0.468	2.07	0.437
CV	6.89	0.00	97.98	98.88	5.13	2.31	8.62
Grand Mean	31458.33	0.00	0.42	0.67	9.13	89.67	5.08

Insect Code	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower	Yield Lint
Rating Unit	/5 Plants	/5 plants	/10 Plants	lbs/acre
Rating Date	August 20	August 20	August 4	October 21
Treatment				
PM 2326BG	8.47	80.0	1.67	1,105.96
DP 237B	8.40	78.0	1.87	1,049.28
NuCOTN 33B	8.33	79.3	1.67	1,029.66
PM 2280 BG/RR	8.60	75.0	1.87	979.91
PM 280	8.47	78.7	1.67	969.99
PM HS-26	8.53	78.7	1.73	930.28
DP 2379	8.60	78.3	2.13	914.48
DP 5415	8.73	78.0	2.07	903.55
LSD (P=.05)	0.338	4.43	0.519	179.132
Standard Deviation	0.193	2.53	0.296	102.280
CV	2.26	3.23	16.17	10.38
Grand Mean	8.52	78.25	1.83	985.39

Means followed by same letter do not significantly different (P=.05, Student-Newman-Keuls).

**Site description:** Planted May 23, Irrigated 5 times at 4 inches per irrigation.

### Trial Comments:

Light Heliothine pressure prevented the need for insecticide protection. All Bollgard™ varieties out-produced their parental variety but were not significantly different. Lint production ranged from 904 lbs per acre for DP 5415 to 1,106 lbs per acre for PM 2326 BG.

# Influence Of Steward And Tracer Applications To Enhance Insect Protection In Bt Cotton

Insect Code	Stand Count	Bollworm Eggs	Bollworm Larvae	Bollworm Damage Squares	Bollworm Eggs	Bollworm Larvae	Bollworm Damage Squares
Rating Unit	/acre	/10 Plants	/10 Plants	/10 Plants	/10 Plants	/5 Plants	/10 Plants
Rating Date	June 23	July 28	July 28	August 4	August 4	August 4	August 4
Treatment							
SV 4892 BG/RR	30,000.0	0.0	0.0	0.0	0.0	0.0	0.3
SV 474	35,000.0	0.0	0.0	0.0	0.0	0.0	0.7
LSD (P=.05)	7453.01	0.0	0.0	0.0	0.0	0.0	1.43
Standard Deviation	2121.32	0.00	0.00	0.00	0.00	0.00	0.41
CV	6.53	0.00	0.00	0.00	0.00	0.00	81.65
Grand Mean	32500.00	0.00	0.00	0.00	0.00	0.00	0.5

Insect Code	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower	% Retention	Nodes Above White Flower	Yield Lint	Yield Differences
Rating Unit	/5 Plants	/5 Plants	/10 Plants	/5 Plants	/10 Plants	lbs/acre	Lint lbs/acre
Rating Date	August 5	August 5	August 4	August 21	August 21	October 21	
Treatment							
SV 4892 BG/RR	8.93	87.3	5.0	84.80	1.93	1,067.67	83.94
SV 474	9.13	90.7	5.2	78.33	2.00	983.73	
LSD (P=.05)	1.791	3.79	0.497	97.469	0.287	108.67	
Standard Deviation	0.510	1.08	0.141	27.742	0.082	30.904	
CV	5.64	1.21	2.77	41.68	4.15	3.01	
Grand Mean	9.03	89.0	5.1	66.57	1.97	1025.70	

**Site description:** Planted May 23, Irrigated 5 times at 4 inches per irrigation.

**Trial Comments:**

Lack of Heliothine pressure prevented the need to overspray any of the plots with either Steward or Tracer. SV4892 BG/RR out produced SV 474 by 84 lbs lbs lint per acre compensating for the technology rental fee.

# Performance of Bollgard™ and Parental Varieties

Insect Code	Stand Count	Bollworm Eggs	Bollworm Larvae	Bollworm Damage Squares	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower
Rating Unit	/acre	/10 Plants	/10 Plants	/10 Plants	/5 Plants	/5 Plants	/10 Plants
Rating Date	June 23	July 28	July 28	July 28	August 5	August 5	August 21
Treatment							
Stoneville 3539BR	32,666.7	0.0	0.0	0.0	8.40	87.7	4.80
<b>Parent SV 2454R</b>	<b>30,000.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>8.47</b>	<b>87.0</b>	<b>4.87</b>
SV 4691B	29,333.3	0.0	0.0	0.0	8.53	89.0	5.13
<b>PARENT SV 474</b>	<b>30,666.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>7.87</b>	<b>86.7</b>	<b>5.27</b>
Stoneville BXN 49B	32,666.7	0.3	0.0	0.0	8.60	88.7	5.00
<b>Parent SV 474</b>	<b>32,000.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>8.20</b>	<b>86.7</b>	<b>4.73</b>
SV 4892 B	31,000.0	0.0	0.0	0.0	8.40	88.0	4.93
<b>PARENT SV 474</b>	<b>34,666.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>8.73</b>	<b>86.7</b>	<b>4.73</b>
FM 989 B/RR	34,000.0	0.0	0.0	0.0	8.00	88.7	4.80
<b>Parent FM 989</b>	<b>29,333.3</b>	<b>0.7</b>	<b>0.0</b>	<b>0.0</b>	<b>8.67</b>	<b>88.3</b>	<b>4.60</b>
PM 2280 BG/RR	33,000.0	0.0	0.0	0.0	8.33	89.0	5.00
<b>PARENT PM 280</b>	<b>29,666.7</b>	<b>0.7</b>	<b>0.0</b>	<b>0.0</b>	<b>8.60</b>	<b>85.7</b>	<b>4.87</b>
LSD (P=.05)	4588.6	0.46	0.0	0.0	0.850	4.20	0.586
Standard Deviation	2709.41	0.27	0.0	0.0	0.502	2.48	0.346
CV	8.58	194.84	0.0	0.0	5.97	2.83	7.08
Grand Mean	31583.33	0.14	0.0	0.0	8.4	87.67	4.89

Insect Code	Plant Height	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower	Yield Lint	Yield Differences
Rating Unit	/5 Plants	/5 Plants	/10 Plants	/10 Plants	lbs/acre	Lint lbs/acre
Rating Date	August 21	August 21	August 21	August 21	October 21	
Treatment						
SV 3539BR	26.67	8.63	73.67	1.93	1,103.85 a	164.17
<b>Parent SV 2454R</b>	<b>26.80</b>	<b>8.67</b>	<b>77.33</b>	<b>2.07</b>	<b>939.68 ab</b>	
SV 4691B	27.53	8.80	76.67	1.60	1,081.23 ab	122.40
<b>PARENT SV 474</b>	<b>26.93</b>	<b>8.93</b>	<b>77.33</b>	<b>1.87</b>	<b>958.83 ab</b>	
SV BXN 49B	26.67	8.73	78.67	1.67	1,018.44 ab	99.38
<b>Parent SV 474</b>	<b>26.47</b>	<b>8.67</b>	<b>79.00</b>	<b>1.73</b>	<b>920.06 ab</b>	
SV 4892 B	26.20	8.67	78.33	1.73	1,018.27 ab	100.09
<b>PARENT SV 474</b>	<b>26.20</b>	<b>8.80</b>	<b>78.33</b>	<b>1.93</b>	<b>918.18 ab</b>	
FM 989 B/RR	26.93	8.93	75.33	2.00	993.83 ab	162.11
<b>Parent FM 989</b>	<b>26.60</b>	<b>8.80</b>	<b>78.00</b>	<b>2.07</b>	<b>831.72 b</b>	
PM 2280 BG/RR	26.67	8.87	74.80	1.73	842.41 b	262.20
<b>PARENT PM 280</b>	<b>26.87</b>	<b>8.60</b>	<b>77.67</b>	<b>1.67</b>	<b>580.21 c</b>	
LSD (P=.05)	0.794	0.437	19.691	0.483	152.326	
Standard Deviation	0.469	0.258	11.628	0.285	89.952	
CV	1.75	2.95	15.42	15.54	9.63	
Grand Mean	26.71	8.75	75.43	1.83	933.89	

Means followed by same letter do not significantly different (P=.05, Student-Newman-Keuls).

**Site description:** Planted May 23, Irrigated 5 times at 4 inches per irrigation.

Trial Comments:

All Bollgard™ varieties out-produced their parental variety to compensate for the technology rental fees.



# Performance of Picker and Stripper Bollgard™ Varieties

Insect Code	Stand Count	Bollworm Eggs	Bollworm Larvae	Bollworm Damage Squares	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower	1 <sup>st</sup> Fruiting Site
Rating Unit	/acre	/10 Plants	/10 Plants	/10 Plants	/5 Plants	/10 Plants	/10 Plants	/5 Plants
Rating Date	June 23	August 4	August 4	August 4	August 5	August 5	August 5	August 21
Treatment								
DP 449 BG/RR	31,333.33	0.0	0.0	0.0	9.13	89.7	4.87	8.67
SV 4892 BR	30,000.00	0.0	0.0	0.0	9.33	90.0	4.80	8.93
DP 555 BG/RR	32,333.33	0.0	0.0	0.3	9.40	91.0	5.20	9.00
DP 655 BG/RR	31,333.33	0.0	0.0	1.0	8.47	89.7	5.07	9.00
SV BXN 49B	31,333.33	0.0	0.0	0.3	9.07	90.3	5.13	8.93
DP 424 BGII/RR	31,333.33	0.0	0.0	0.0	8.73	90.0	5.00	8.93
SV 5599 BR	31,000.00	0.0	0.0	0.3	8.87	90.7	4.93	8.73
SG 215 BG/RR	32,666.67	0.0	0.0	0.0	9.40	87.3	4.47	8.93
DP 444 BG/RR	30,000.00	0.0	0.0	0.7	8.87	91.7	5.20	8.93
FM 960 B/RR	31,000.00	0.0	0.0	0.0	9.00	87.3	5.07	9.00
FM 989 B/RR	29,000.00	0.0	0.0	0.3	8.67	86.3	4.80	8.93
DP 468 BGII/RR	33,666.67	0.0	0.0	0.0	8.67	90.3	5.20	8.93
SV 3539 BR	31,333.33	0.0	0.0	0.0	8.93	86.3	4.87	9.13
SV 4691 B	34,333.33	0.0	0.0	0.3	8.53	90.3	5.13	8.87
PM 2280 BG/RR	31,000.00	0.0	0.0	0.3	9.07	88.7	4.87	8.87
LSD (P=.05)	4196.62	0.00	0.00	0.66	0.911	3.57	0.611	0.515
Standard Deviation	2509.66	0.00	0.00	0.39	0.545	2.14	0.365	0.308
CV	7.98	0.0	0.0	161.35	6.1	2.39	7.35	3.45
Grand Mean	31444.45	0.0	0.0	0.24	8.94	89.31	4.97	8.92

Insect Code	% Retention	Nodes Above White Flower	Yield Lint
Rating Unit	/10 Plants	/10 Plants	lbs/acre
Rating Date	August 21	August 21	October 21
Treatment			
DP 449 BG/RR	76.67	1.87	1,355.57 a
SV 4892 BR	77.67	1.80	1,230.38 ab
DP 555 BG/RR	76.67	1.73	1,195.00 abc
DP 655 BG/RR	76.33	1.93	1,172.91 abc
SV BXN 49B	75.33	1.93	1,158.09 abc
DP 424 BGII/RR	77.33	1.80	1,149.67 abc
SV 5599 BR	77.00	2.07	1,149.38 abc
SG 215 BG/RR	77.67	1.73	1,142.62 abc
DP 444 BG/RR	77.67	1.60	1,124.24 abc
FM 960 B/RR	54.47	1.80	1,117.84 abc
FM 989 B/RR	76.67	1.73	1,100.48 abc
DP 468 BGII/RR	78.33	1.60	1,076.21 bc
SV 3539 BR	75.00	2.00	989.10 bcd
SV 4691 B	76.33	1.73	962.87 cd
PM 2280 BG/RR	76.33	1.80	846.85 d
LSD (P=.05)	18.059	0.482	151.411
Standard Deviation	10.799	0.288	90.547
CV	14.34	15.93	8.10
Grand Mean	75.30	1.81	1118.08

Means followed by same letter do not significantly different (P=.05, Student-Newman-Keuls).

**Site description:** Planted May 23, Irrigated 5 times at 4 inches per irrigation.

**Trial Comments:**

DP 449 BG/RR 1,355.57 lbs lint per acre was top yielder and was significantly different than DP468 BGII/RR 1,076 lbs lint per acre, SV3539 BR 989 lbs lint per acre, SV 4691 963 lbs lint per acre, and PM 2280 BG/RR 847 lbs lint per acre respectfully.

## Seed Treatment Insecticide Trial

Insect Code		Stand Count	Thrips	Thrips Rating	Thrips	Thrips Rating	Fleahoppers
Rating Unit		/acre	/10 Plants	/5 feet of row	/10 Plants	/5 feet of row	/5 sweeps
Rating Date	Rate	June 5	June 9	June 12	June 16	June 16	July 4
Treatment							
Dynasty + Cruiser	25.0 G A/CWT 34.0 G A/CWT	35,333.3	3.3	3.7 b	20.0	3.3 c	0.3
Dynasty	25.0 G A/CWT	34,333.3	0.0	5.3 ab	21.7	6.7 a	1.3
Cruiser	34.0 G A/CWT	35,666.7	5.0	4.3 ab	21.7	4.3 bc	0.3
Temik	0.5 lbs ai/acre	33,333.3	5.0	4.7 ab	20.0	4.7 bc	2.0
Untreated		35,333.3	6.7	6.7 a	25.0	6.3 a	1.0
Bidrin	0.1 lbs ai/acre	35,333.3	5.0	5.3 ab	0.0	5.7 ab	1.3
LSD (P=.05)		5,613.56	10.37	1.73	12.61	1.24	1.55
Standard Deviation		3,085.81	5.70	0.95	6.93	0.68	0.85
CV		8.84	136.82	18.97	38.39	13.22	80.51
Grand Mean		34,888.89	4.17	5.0	18.06	5.17	1.06

Insect Code		Bollworm Eggs	Bollworm Larvae	Bollworm Damage Squares	Bollworm Eggs	Bollworm Larvae	Bollworm Damage Squares
Rating Unit		/10 Plants	/10 Plants	/10 Plants	/10 Plants	/10 Plants	/10 Plants
Rating Date	Rate	July 21	July 21	July 21	July 28	July 28	July 28
Treatment							
Dynasty + Cruiser	25.0 G A/CWT 34.0 G A/CWT	0.0	0.0	0.0	0.0	0.0	0.0
Dynasty	25.0 G A/CWT	0.0	0.0	0.0	0.0	0.0	0.0
Cruiser	34.0 G A/CWT	0.0	0.0	0.0	0.0	0.0	0.0
Temik	0.5 lbs ai/acre	0.0	0.0	0.0	0.0	0.0	0.0
Untreated		0.0	0.0	0.0	0.0	0.0	0.0
Bidrin	0.1 lbs ai/acre	0.0	0.0	0.0	0.0	0.0	0.0
LSD (P=.05)		0.00	0.00	0.00	0.00	0.00	0.00
Standard Deviation		0.00	0.00	0.00	0.00	0.00	0.00
CV		0.00	0.00	0.00	0.00	0.00	0.00
Grand Mean		0.00	0.00	0.00	0.00	0.00	0.00

Insect Code		Bollworm Larvae	Bollworm Damage Squares	Bollworm Damage Squares	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower
Rating Unit		/10 Plants	/10 Plants	/10 Plants	/5 Plants	/5 Plants	/5 Plants
Rating Date	Rate	July 28	July 28	August 4	August 5	August 5	August 5
Treatment							
Dynasty + Cruiser	25.0 G A/CWT 34.0 G A/CWT	0.0	0.0	0.0	8.07	83.3	3.87
Dynasty	25.0 G A/CWT	0.0	0.0	0.0	8.00	82.3	4.00
Cruiser	34.0 G A/CWT	0.0	0.0	0.0	8.80	80.3	4.07
Temik	0.5 lbs ai/acre	0.0	0.0	0.0	8.93	86.0	4.27
Untreated		0.0	0.0	0.3	8.67	82.7	4.20
Bidrin	0.1 lbs ai/acre	0.0	0.0	0.7	8.53	82.7	4.07
LSD (P=.05)		0.00	0.00	0.66	1.012	6.01	0.622
Standard Deviation		0.00	0.00	0.37	0.556	3.30	0.342
CV		0.00	0.00	219.09	6.54	3.99	8.38
Grand Mean		0.00	0.00	0.17	8.5	82.89	4.08

Insect Code		1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower	Yield Lint lbs
Rating Unit		/5 Plants	/5 Plants	/5 Plants	/acre
Rating Date	Rate	August 21	August 21	August 21	October 21
Treatment					
Dynasty + Cruiser	25.0 G A/CWT 34.0 G A/CWT	8.40	79.7	1.67	919.88
Dynasty	25.0 G A/CWT	8.60	80.0	1.80	918.77
Cruiser	34.0 G A/CWT	8.40	79.7	1.73	916.65
Temik	0.5 lbs ai/acre	8.53	75.0	1.73	913.30
Untreated		8.53	79.7	2.13	846.58
Bidrin	0.1 lbs ai/acre	8.47	78.0	1.93	845.29
LSD (P=.05)		0.294	4.66	0.430	168.578
Standard Deviation		0.162	2.56	0.237	92.668
CV		1.91	3.26	12.91	10.37
Grand Mean		8.49	78.67	1.83	893.41

**Site description:** Planted May 23, Irrigated 5 times at 4 inches per irrigation.

**Trail Comments:**

Light thrips numbers prevailed throughout the sampling period. Leaf distortion ratings varied, but Dynasty + Cruiser had the lowest leaf distortion rating throughout the sampling period. No significant differences in yields occurred. All seed treatments produced greater yields than the untreated check. Bidrin .1lbs ai / acre yields failed to surpass the untreated check yield of 847 lbs lint/acre.

# Cotton Fleahopper Insecticide Trial Conventional Cotton

Insect Code		Fleahopper	Spiders	Ladybugs	Fleahopper	% Control	Spiders	Ladybugs	Big-eyed
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps
Rating Date		July 10	July 10	July 10	July 14	July 14	July 14	July 14	July 14
Trt-Eval Interval	Rate	Precount	Precount	Precount	4 DAT	4 DAT	4 DAT	4 DAT	4 DAT
Treatment	Unit								
Vydate	0.25				1.0 b	93.06 a	0.3	0.0	0.0
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25				0.3 b	97.92 a	0.0	0.0	0.7
Intuder	0.025				0.3 b	97.22 a	0.3	0.0	0.0
Bidrin+ Crop Oil 1.0 pt/acre	0.25				0.0 b	100.00 a	0.0	0.0	0.0
Centric	0.05				0.0 b	100.00 a	0.0	0.3	0.0
Centric	0.031				0.0 b	100.00 a	0.0	0.0	0.3
Intruder + Crop Oil 1.0 pt/acre	0.018				0.3 b	98.25 a	0.7	0.3	1.0
Trimax	0.031				0.3 b	97.22 a	0.0	0.0	0.0
Intruder	0.018				0.0 b	100.00 a	0.0	0.3	0.0
Intruder + Crop Oil 1.0 pt/acre	0.025				0.0 b	100.00 a	0.3	0.0	0.0
Bidrin	0.25				0.0 b	100.00 a	0.0	0.0	0.0
Intruder + Vydate 0.25	0.018 0.25				0.7 b	95.14 a	0.0	0.3	1.0
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25				1.0 b	94.74 a	0.0	0.3	0.0
Intruder + Vydate 0.25	0.025 0.25				0.7 b	96.16 a	0.7	0.0	0.0
Trimax+ Crop Oil 1.0 pt/acre	0.031				0.3 b	97.22 a	0.0	0.0	0.0
Centric + Crop Oil 1.0 pt/acre	0.031				1.0 b	94.41 a	0.0	0.0	0.7
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018				0.3 b	98.25 a	0.0	0.3	0.0
Untreated		30.0	0.7	1.0	15.7 a	0.00 b	1.7	0.3	1.3
LSD (P=.05)		-	-	-	1.74	6.794	0.98	0.58	1.16
Standard Deviation		-	-	-	1.05	4.075	0.59	0.35	0.70
CV		-	-	-	85.61	4.42	263.9	267.04	251.21
Grand Mean		30.0	0.7	1.0	1.22	92.20	0.22	0.13	0.28

Insect Code		Fleahopper	% Control	Spiders	Ladybugs	Nabids	Collops	Fleahopper	% Control
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps
Rating Date		July 17	July 17	July 17	July 17	July 17	July 17	July 24	July 24
Trt-Eval Interval	Rate	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT	14 DAT	14 DAT
Treatment	Unit	0.7 b	86.67 a	0.0	0.0	0.0	0.3	0.7	33.33
Vydate	0.25	0.0 b	100.00 a	0.0	0.0	0.3	0.3	0.0	100.00
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25	0.0 b	100.00 a	0.0	0.3	0.0	0.0	0.7	33.33
Intuder	0.025	0.0 b	100.00 a	0.0	0.0	0.7	0.3	0.7	33.33
Bidrin+ Crop Oil 1.0 pt/acre	0.25	0.0 b	100.00 a	0.0	0.0	0.0	0.0	0.7	33.33
Centric	0.05	0.0 b	100.00 a	1.0	0.0	0.0	0.0	0.3	66.67
Centric	0.031	0.0 b	100.00 a	0.0	0.0	0.0	0.0	0.3	66.67
Intruder + Crop Oil 1.0 pt/acre	0.018	0.3 b	93.33 a	0.0	0.0	0.0	0.0	0.0	100.00
Trimax	0.031	0.0 b	100.00 a	0.3	0.3	0.0	0.0	0.0	100.00
Intruder	0.018	0.0 b	100.00 a	0.0	0.0	0.0	0.0	0.0	100.00
Intruder + Crop Oil 1.0 pt/acre	0.025	0.0 b	100.00 a	0.0	0.0	0.0	0.3	0.0	100.00
Bidrin	0.25	0.3 b	93.33 a	0.7	0.3	0.0	0.0	0.3	100.00
Intruder + Vydate	0.018 0.25	0.0 b	100.00 a	0.0	0.0	0.0	0.0	0.0	100.00
Intruder + Vydate	0.025 0.25	0.0 b	100.00 a	0.0	0.0	0.0	0.0	0.0	100.00
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25	0.0 b	100.00 a	0.3	0.3	0.0	0.0	1.0	24.30
Trimax+ Crop Oil 1.0 pt/acre	0.031	1.0 b	66.67 ab	0.0	0.0	0.0	0.0	0.0	100.00
Centric + Crop Oil 1.0 pt/acre	0.031	0.3 b	93.33 a	0.0	0.0	0.0	0.0	0.7	33.33
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018	0.0 b	100.00 a	0.3	0.0	0.0	0.0	0.0	100.00
Untreated		2.7 a	0.00 a	0.0	0.0	0.0	0.3	1.17	0.00
LSD (P=.05)		1.31	33.848	0.91	0.44	0.50	0.48	0.70	62.258
Standard Deviation		0.78	20.302	0.54	0.27	0.30	0.29	236.82	37.341
CV		264.31	21.98	367.42	359.23	534.68	312.79	0.3	43.83
Grand Mean		0.3	92.35	0.15	0.07	0.06	0.09	85.16	85.19



Insect Code		Spiders	Ladybugs	Collops	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower	1 <sup>st</sup> Fruiting Site	% Retention
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/5 Plants	/5 Plants	/5 Plants	/5 Plants	/5 Plants
Rating Date		July 24	July 24	July 24	August 7	August 7	August 7	August 25	August 25
Trt-Eval Interval	Rate	14 DAT	14 DAT	14 DAT					
Treatment	Unit								
Vydate	0.25	0.0	0.0	0.0	8.33	88.67	5.27	9.33	73.33
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25	0.0	0.3	0.0	8.07	85.43	5.53	9.07	77.00
Intuder	0.025	0.0	0.0	0.0	7.47	85.13	5.40	8.80	54.13
Bidrin+ Crop Oil 1.0 pt/acre	0.25	0.0	0.3	0.0	8.13	88.37	5.13	9.07	76.67
Centric	0.05	0.3	0.0	1.0	8.60	85.67	5.53	8.93	74.67
Centric	0.031	0.0	0.3	0.0	8.33	86.17	5.47	9.13	76.00
Intruder + Crop Oil 1.0 pt/acre	0.018	0.7	1.0	0.0	8.60	86.57	5.40	8.73	77.00
Trimax	0.031	0.0	0.7	0.3	8.33	90.37	5.07	9.07	77.00
Intruder	0.018	0.0	0.7	0.0	8.27	87.97	5.53	9.00	76.67
Intruder + Crop Oil 1.0 pt/acre	0.025	0.0	0.0	0.0	8.47	86.77	5.20	8.93	76.33
Bidrin	0.25	0.0	0.0	0.7	8.67	87.23	5.33	9.13	77.33
Intruder + Vydate	0.018 0.25	0.0	0.0	0.0	8.27	86.50	5.60	9.13	78.33
Intruder + Vydate	0.025 0.25	0.0	0.0	0.0	8.47	85.60	5.27	8.93	78.00
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25	0.0	0.0	0.3	8.33	85.50	5.40	8.73	78.00
Trimax+ Crop Oil 1.0 pt/acre	0.031	0.0	0.0	0.0	8.47	88.70	5.40	8.73	77.33
Centric + Crop Oil 1.0 pt/acre	0.031	0.0	0.3	0.0	8.20	88.80	5.47	9.13	78.00
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018	0.0	0.7	0.3	8.20	86.43	5.40	9.00	73.33
Untreated		0.0	0.7	0.0	8.13	84.47	5.47	9.00	75.67
LSD (P=.05)		0.50	1.11	0.91	0.776	5.223	0.395	0.564	16.060
Standard Deviation		0.30	0.66	0.54	0.465	3.133	0.237	0.338	9.633
CV		534.68	239.12	367.42	5.61	3.6	4.4	3.76	12.8
Grand Mean		0.06	0.28	0.15	8.3	86.91	5.38	8.99	75.27

Insect Code		Nodes Above White Flower	Yield	Yield Differences
Rating Unit		/5 Plants	Lint lbs /acre	Lint lbs/acre
Rating Date		August 7	October 23	
Trt-Eval Interval	Rate			
Treatment	Unit			
Vydate	0.25	1.87 ab	1,034.01 a	161.18
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25	1.87 ab	1,002.11 ab	129.28
Intuder	0.025	1.87 ab	997.53 ab	124.70
Bidrin+ Crop Oil 1.0 pt/acre	0.25	1.60 ab	997.06 ab	124.23
Centric	0.05	2.33 a	987.84 ab	115.01
Centric	0.031	1.93 ab	980.21 ab	107.38
Intruder + Crop Oil 1.0 pt/acre	0.018	1.67 ab	969.22 ab	96.39
Trimax	0.031	1.73 ab	958.06 ab	85.23
Intruder	0.018	1.67 ab	951.54 ab	78.71
Intruder + Crop Oil 1.0 pt/acre	0.025	1.80 ab	951.42 ab	78.59
Bidrin	0.25	1.93 ab	947.37 ab	74.54
Intruder + Vydate	0.018 0.25	1.67 ab	942.61 ab	69.78
Intruder + Vydate	0.025 0.25	1.93 ab	931.40 ab	58.57
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25	1.93 ab	939.38 ab	66.55
Trimax+ Crop Oil 1.0 pt/acre	0.031	1.47 b	935.86 ab	63.03
Centric + Crop Oil 1.0 pt/acre	0.031	1.73 ab	908.14 ab	35.31
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018	1.67 ab	907.37 ab	34.54
Untreated		1.67 ab	872.83 b	
LSD (P=.05)		0.416	86.655	
Standard Deviation		0.250	51.973	
CV		13.90	5.43	
Grand Mean		1.80	956.33	

Means followed by same letter do not significantly different (P=.05, Student-Newman-Keuls).

**Site description:** Planted May 23, Irrigated 5 times at 4 inches per irrigation.

**Trial Comments:**

Cotton fleahopper numbers were highest at the beginning of the test and declined steadily throughout the sampling period. All treatments were significantly different from the untreated check 4 DAT, but no significant difference occurred 7 DAT or 14 DAT. Only the Vydate .25 lbs ai / acre produced significantly greater yield 1,034 lbs lint per acre than the untreated check 873 lbs lint per acre.

# Cotton Fleahopper Insecticide Trial

## Bollgard™ Cotton

Insect Code		Fleahopper	Spiders	Ladybugs	Fleahopper	% Control	Spiders	Ladybugs	Big-eyed
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps
Rating Date		July 10	July 10	July 10	July 14	July 14	July 14	July 14	July 14
Trt-Eval Interval	Rate	Precount	Precount	Precount	4 DAT	4 DAT	4 DAT	4 DAT	4 DAT
Treatment	Unit								
Centric + Crop Oil 1.0 pt/acre	0.031				0.0 b	100.00 a	0.3	0.0	0.0
Intruder + Crop Oil 1.0 pt/acre	0.025				0.0 b	100.00 a	0.3	0.0	0.0
Centric	0.031				1.3 b	90.77 a	0.7	0.0	0.0
Intruder + Crop Oil 1.0 pt/acre	0.018				2.7 b	82.08 a	0.0	0.3	0.0
Intruder	0.018				0.0 b	100.00 a	0.3	0.0	0.7
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25				0.7 b	93.33 a	0.0	0.0	0.7
Intruder + Vydate	0.018 0.25				0.0 b	100.00 a	0.3	0.3	0.3
Intuder	0.025				0.0 b	100.00 a	0.3	0.0	0.0
Trimax	0.031				0.0 b	100.00 a	0.0	0.3	0.0
Bidrin	0.25				1.0 b	91.25 a	0.0	0.0	0.0
Vydate	0.25				0.0 b	100.00 a	0.0	0.0	0.0
Centric	0.05				1.0 b	94.10 a	0.0	0.0	0.0
Trimax+ Crop Oil 1.0 pt/acre	0.031				0.0 b	100.00 a	0.0	0.0	0.0
Bidrin+ Crop Oil 1.0 pt/acre	0.25				1.3 b	91.22 a	0.0	0.0	0.0
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018				0.0 b	100.00 a	0.0	0.3	0.0
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25				0.7 b	93.33 a	0.7	0.0	0.3
Intruder + Vydate	0.025 0.25				0.7 b	94.58 a	0.0	0.0	0.7
Untreated		30.0	0.7	1.0	17.3 a	0.00 b	1.0	1.0	0.0
LSD (P=.05)		-	-	-	3.73	12.334	0.91	0.81	0.64
Standard Deviation		-	-	-	2.24	7.398	0.55	0.48	0.39
CV		-	-	-	151.12	8.17	246.74	373.33	260.76
Grand Mean		-	-	-	1.48	90.59	0.22	0.13	0.15

Insect Code		Fleahopper	% Control	Spiders	Ladybugs	Nabids	Collops	Stinkbugs	Fleahopper
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps
Rating Date		July 17	July 17	July 17	July 17	July 17	July 17	July 17	July 24
Trt-Eval Interval	Rate	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT	14 DAT
Treatment	Unit								
Centric + Crop Oil 1.0 pt/acre	0.031	1.3 b	79.63	0.3	0.0	0.0	0.0	0.0	2.3
Intruder + Crop Oil 1.0 pt/acre	0.025	0.3 b	96.30	0.0	0.0	0.7	0.0	0.0	0.0
Centric	0.031	1.0 b	90.00	0.3	0.0	0.0	0.0	0.0	0.3
Intruder + Crop Oil 1.0 pt/acre	0.018	0.3 b	93.33	0.7	0.3	0.3	0.0	0.0	0.3
Intruder	0.018	1.0 b	89.26	0.0	0.0	0.0	0.0	0.0	0.0
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018	0.0 b	100.00	1.3	0.0	0.0	0.3	0.3	0.0
Intruder + Vydate	0.018 0.25	0.3 b	96.67	0.0	0.3	1.0	0.7	0.0	0.7
Intuder	0.025	0.0 b	100.00	0.0	0.0	1.3	0.0	0.0	0.3
Trimax	0.031	0.7 b	92.59	0.7	0.0	0.0	0.0	0.0	0.3
Bidrin	0.25	1.0 b	88.89	0.3	0.7	0.0	0.0	0.0	0.7
Vydate	0.25	1.0 b	89.26	0.0	0.0	1.0	1.0	0.0	2.3
Centric	0.05	0.7 b	90.00	0.0	0.0	0.0	0.0	0.0	0.7
Trimax+ Crop Oil 1.0 pt/acre	0.031	1.7 b	81.48	0.7	0.3	1.0	0.0	0.0	0.0
Bidrin+ Crop Oil 1.0 pt/acre	0.25	3.0 b	52.96	0.3	1.0	0.0	0.0	0.3	1.0
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25	1.3 b	83.33	0.0	0.3	2.3	0.3	0.0	0.0
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25	1.0 b	88.89	0.0	0.3	0.0	0.0	0.0	1.0
Intruder + Vydate	0.025 0.25	0.7 b	86.67	0.3	0.0	1.0	0.0	0.0	0.3
Untreated		8.0 b	0.00	0.3	0.3	0.0	0.7	0.7	2.7
LSD (P=.05)		2.39	31.009	0.83	0.93	1.88	0.90	0.57	2.09
Standard Deviation		1.43	18.599	0.50	0.56	1.13	0.54	0.34	1.25
CV		110.66	22.33	168.93	273.05	234.37	323.58	460.90	173.42
Grand Mean		1.3	83.29	0.3	0.2	0.48	0.17	0.07	0.72

Insect Code		% Control	Spiders	Ladybugs	Nabids	Collops	1 <sup>st</sup> Fruiting Site	% Retention	NAWF
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/5 Plants	/5 Plants	/5 Plants
Rating Date		July 24	July 24	July 24	July 24	July 24	August 7	August 7	August 7
Trt-Eval Interval	Rate	14 DAT	14 DAT	14 DAT	14 DAT	14 DAT			
Treatment	Unit								
Centric + Crop Oil 1.0 pt/acre	0.031	66.67	0.7	0.0	0.0	0.7	9.07	97.03 ab	6.67
Intruder + Crop Oil 1.0 pt/acre	0.025	100.00	0.3	0.0	0.0	0.0	9.07	96.30 ab	6.60
Centric	0.031	93.33	1.0	0.0	0.3	0.0	9.07	95.00 ab	6.60
Intruder + Crop Oil 1.0 pt/acre	0.018	93.33	1.0	0.0	0.0	0.0	8.93	95.20 ab	6.67
Intruder	0.018	100.00	0.0	0.0	0.0	0.0	9.00	94.27 b	6.47
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018	100.00	0.0	0.3	0.0	0.0	9.13	95.03 ab	6.80
Intruder + Vydate	0.018 0.25	77.78	0.3	0.7	0.0	0.7	8.93	98.47 a	6.60
Intuder	0.025	88.89	0.7	0.0	0.0	0.3	8.93	94.73 ab	6.47
Trimax	0.031	93.33	0.3	0.0	0.0	0.3	8.87	95.47 ab	6.73
Bidrin	0.25	86.67	0.0	0.0	0.0	0.0	9.00	95.57 ab	6.87
Vydate	0.25	31.11	0.0	0.0	0.0	0.0	8.80	95.90 ab	6.53
Centric	0.05	77.78	0.0	0.0	0.3	0.7	9.07	95.60 ab	6.80
Trimax+ Crop Oil 1.0 pt/acre	0.031	100.00	1.0	0.3	0.0	0.7	9.07	95.50 ab	6.87
Bidrin+ Crop Oil 1.0 pt/acre	0.25	100.00	1.3	0.0	0.7	0.3	9.07	94.80 ab	6.80
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25	100.00	0.0	0.0	0.0	0.3	8.80	96.37 ab	6.67
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25	66.67	1.0	0.3	0.0	0.0	9.20	96.30 ab	6.73
Intruder + Vydate	0.025 0.25	93.33	0.3	0.0	0.3	0.0	9.13	95.67 ab	6.80
Untreated		33.33	0.7	0.0	1.7	0.0	9.00	95.93 ab	6.73
LSD (P=.05)		51.690	1.39	0.58	1.29	0.97	0.365	2.206	0.268
Standard Deviation		31.003	0.83	0.35	0.77	0.58	0.219	1.323	0.161
CV		37.15	173.14	378.91	417.22	262.34	2.43	1.38	2.40
Grand Mean		83.46	0.48	0.09	0.19	0.22	9.01	95.73	6.69

Insect Code		1 <sup>st</sup> Fruiting Site	% Retention	NAWF	Yield Lint	Yield Differences
Rating Unit		/5 Plants	/5 Plants	/5 Plants	lbs/acre	Lint lbs/acre
Rating Date		August 25	August 25	August 25	October 22	
Trt-Eval Interval	Rate					
Treatment	Unit					
Centric + Crop Oil 1.0 pt/acre	0.031	9.33	88.3	3.07	1,131.16	178.21
Intruder + Crop Oil 1.0 pt/acre	0.025	9.20	86.3	2.80	1,130.69	177.74
Centric	0.031	9.13	88.0	3.07	1,119.71	166.76
Intruder + Crop Oil 1.0 pt/acre	0.018	9.20	89.3	2.87	1,113.19	160.24
Intruder	0.018	9.20	90.3	3.27	1,109.90	156.95
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018	9.40	89.0	3.07	1,108.25	155.3
Intruder + Vydate	0.018 0.25	9.27	89.3	2.80	1,104.85	151.9
Intuder	0.025	9.40	87.7	2.87	1,092.22	139.27
Trimax	0.031	9.20	87.7	3.27	1,087.22	134.27
Bidrin	0.25	9.33	86.0	2.67	1,077.24	124.29
Vydate	0.25	35.53	87.0	3.00	1,074.77	121.82
Centric	0.05	9.20	87.0	3.40	1,062.03	109.08
Trimax+ Crop Oil 1.0 pt/acre	0.031	9.13	87.3	2.73	1,053.69	100.74
Bidrin+ Crop Oil 1.0 pt/acre	0.25	9.20	88.7	3.20	1,051.40	98.45
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25	9.40	89.0	3.20	1,049.57	96.62
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25	9.40	88.7	2.93	1,044.82	91.87
Intruder + Vydate	0.025 0.25	9.20	89.3	3.07	996.12	43.17
Untreated		9.20	88.7	2.47	952.95	
LSD (P=.05)		17.839	4.25	0.641	103.048	
Standard Deviation		10.699	2.55	0.384	61.806	
CV		99.82	2.89	12.88	5.75	
Grand Mean		10.72	88.2	2.99	1075.54	

Means followed by same letter do not significantly different (P=.05, Student-Newman-Keuls).

**Site description:** Planted May 23, Irrigated 5 times at 4 inches per irrigation.

**Trial Comments:**

Cotton fleahopper numbers were highest at the beginning of the test and declined steadily throughout the sampling period. All treatments were significantly different from the untreated check 4 DAT, but no significant difference occurred 7 DAT or 14 DAT. None of the treatments produced significantly greater yields than the untreated check 952 lbs lint per acre. Centric + Crop oil was top yielder producing 1,131 lbs lint per acre.



# Economic Returns for Treatment Combinations

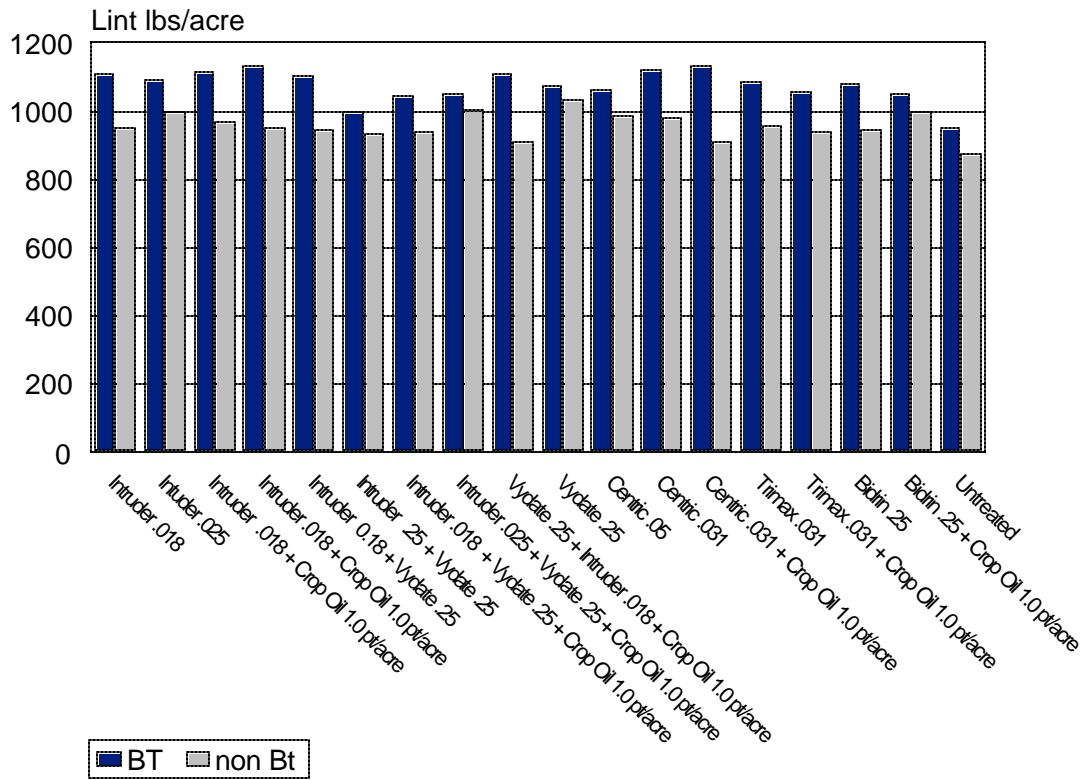
Rating Unit	Trt-Eval Interval	Conventional		Bollgard™	
		Lint Gain <sup>1</sup>	Value (\$)² Return on Spray	Lint Gain <sup>1</sup>	Value (\$)² Return on Spray
Treatment	Rate				
Intruder	0.018	78.71	37.43	156.95	78.11
Intuder	0.025	124.70	59.97	139.27	67.55
Intruder + Crop Oil 1.0 pt/acre	0.018	96.39	45.75	160.24	78.94
Intruder + Crop Oil 1.0 pt/acre	0.025	78.59	35.12	177.74	86.68
Intruder + Vydate	0.018 0.25	69.78	28.26	151.90	70.96
Intruder + Vydate	0.025 0.25	58.57	21.07	43.17	13.05
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.018 0.25	66.55	25.70	91.87	38.86
Intruder + Vydate+ Crop Oil 1.0 pt/acre	0.025 0.25	129.28	56.95	96.62	39.97
Vydate + Intruder+ Crop Oil 1.0 pt/acre	0.25 0.018	34.54	9.06	155.30	71.85
Vydate	0.25	161.18	79.28	121.82	58.82
Centric	0.05	115.01	50.11	109.08	47.02
Centric	0.031	107.38	49.83	166.76	80.71
Centric + Crop Oil 1.0 pt/acre	0.031	35.31	11.48	178.21	85.78
Trimax	0.031	85.23	38.38	134.27	63.88
Trimax+ Crop Oil 1.0 pt/acre	0.031	63.03	25.96	100.74	45.56
Bidrin	0.25	74.54	35.88	124.29	61.75
Bidrin+ Crop Oil 1.0 pt/acre	0.25	124.23	60.84	98.45	47.44
<b>Average</b>		<b>83.50</b>	<b>37.28</b>	<b>122.59</b>	<b>57.61</b>

<sup>1</sup>Lint gain = Lint lbs/acre that exceeded the Untreated checks production.

<sup>2</sup>Value = (lint lbs of lint \* \$0.52) minus cost of insecticides regimes; does not include application costs.

## Trial Comments:

Slightly higher economic returns resulted for insecticide treatments applied to Bollgard™ than to conventional cotton. The treatment average for Bollgard™ was 123 lbs lint per acre increasing monetary returns by \$57.61 per acre compared to 84 lbs and \$37.28 per acre for treatments applied to conventional cotton. Centric .031 lbs ai / acre + Crop oil produced the greatest monetary return in Bollgard™ cotton \$85.78 per acre and Vydate .25 lb ai /acre produced the greatest monetary return \$79.28 per acre in conventional cotton. Economic returns indicate that all insecticide treatment combinations increased yields to compensate for control costs.



# Efficacy of Vydate Injected and Foliar Applied Vydate to Control Early Season Insect Pests - Demonstrations

Cooperator: Harold and Mitch Worrell  
 Location: Jackson County  
 Planting Date: May 5, 2003  
 Variety: Stoneville 4892 BRR  
 Finish Spray: 10 gals/acre  
 Application dates: July 14 and July 24

Insect Code		Fleahopper	Spiders	Ladybugs	Grasshoppers	Bigeyed bugs	Collops	Assassin bugs
Rating Unit		/25 sweeps	/25 sweeps	/25 sweeps	/25 sweeps	/25 sweeps	/25 sweeps	/25 sweeps
Rating Date		July 14	July 14	July 14	July 14	July 14	July 14	July 14
Trt-Eval Interval	Rate	Precount	Precount	Precount	Precount	Precount	Precount	Precount
Treatment	Unit							
Untreated		9.7	1.0	0.3	0.3	1.0	0.3	0.3
Vydate C LV Foliar	0.33	13.7	1.3	1.0	0.0	0.3	1.3	0.0
Vydate L Injected	0.33	17.7	1.7	0.3	0.0	1.0	0.0	0.0
Insect Code		Fleahopper	Spiders	Ladybugs	Grasshoppers	Bigeyed bugs	Collops	Assassin bugs
Rating Unit		/25 Plants	/25 Plants	/25 Plants	/25 Plants	/25 Plants	/25 Plants	/25 Plants
Rating Date		July 14	July 14	July 14	July 14	July 14	July 14	July 14
Trt-Eval Interval	Rate	Precount	Precount	Precount	Precount	Precount	Precount	Precount
Treatment	Unit							
Untreated		9.7	0.7	0.7	1.0	1.7	0.0	0.3
Vydate C LV Foliar	0.33	13.0	2.0	0.3	1.3	1.3	0.7	0.0
Vydate L Injected	0.33	8.3	1.0	0.3	0.0	1.0	0.0	0.0
Insect Code		Plant Height	1 <sup>st</sup> Fruiting Site	% Retention	Fleahopper	% Control	Spiders	Ladybugs
Rating Unit		/5 Plants	/5 Plants	/5 Plants	/10 sweeps	/10 sweeps	/10 sweeps	/10sweeps
Rating Date		July 14	July 14	July 14	July 18	July 18	July 18	July 18
Trt-Eval Interval	Rate	Precount	Precount	Precount	4 DAT	4 DAT	4 DAT	4 DAT
Treatment	Unit							
Untreated		20.50	8.00	79.00	13.3	0.00	2.3	0.0
Vydate C LV Foliar	0.33	22.50	7.75	82.00	0.0	100.0	0.3	1.0
Vydate L Injected	0.33	22.50	7.50	84.00	7.7	37.50	2.3	0.7

Insect Code		Nabids	Stinkbugs	Fleahopper	% Control	Spiders	Ladybugs	Nabids
Rating Unit		/10 sweeps	/10 sweeps	/25 Plants	/25 Plants	/25 Plants	/25 Plants	/25 Plants
Rating Date		July 18	July 18	July 18	July 18	July 18	July 18	July 18
Trt-Eval Interval	Rate	4 DAT	4 DAT	4 DAT	4 DAT	4 DAT	4 DAT	4 DAT
Treatment	Unit							
Untreated		4.7	0.3	6.3	0.00	0.7	1.7	3.0
Vydate C LV Foliar	0.33	2.7	0.0	0.0	100.00	1.7	0.0	2.0
Vydate L Injected	0.33	2.0	0.0	5.7	30.16	1.0	0.3	0.3

Insect Code		Collops	Grasshoppers	Plant Height	1 <sup>st</sup> Fruiting Site	% Retention	Fleahopper	% Control
Rating Unit		/25 Plants	/25 Plants	/5 Plants	/5 Plants	/5 Plants	/10 sweeps	/10 sweeps
Rating Date		July 18	July 18	July 21	July 21	July 21	July 21	July 21
Trt-Eval Interval	Rate	4 DAT	4 DAT	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT
Treatment	Unit							
Untreated		0.0	0.3	24.00	8.0	73.0	0.0	0.0
Vydate C LV Foliar	0.33	0.3	0.0	24.80	8.0	81.00	0.0	100.0
Vydate L Injected	0.33	0.7	0.3	23.40	8.4	78.00	0.0	100.0

Insect Code		Spiders	Ladybugs	Nabids	Stinkbugs	Grasshoppers	Fleahopper	% Control
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/25 Plants	/25 Plants
Rating Date		July 21	July 21	July 21	July 21	July 21	July 21	July 21
Trt-Eval Interval	Rate	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT	7 DAT
Treatment	Unit							
Untreated		3.3	1.7	11.7	0.0	3.3	7.0	0.0
Vydate C LV Foliar	0.33	1.0	2.3	17.7	0.0	1.0	0.0	100.0
Vydate L Injected	0.33	4.0	1.3	9.3	0.0	1.3	5.7	20.24

Insect Code		Spiders	Ladybugs	Nabids	Collops	Fleahopper	% Control	Spiders
Rating Unit		/25 Plants	/25 Plants	/25 Plants	/25 Plants	/10 sweeps	/10 sweeps	/10 sweeps
Rating Date		July 21	July 21	July 21	July 21	July 24	July 24	July 24
Trt-Eval Interval	Rate	7 DAT	7 DAT	7 DAT	7 DAT	10 DAT	10 DAT	10 DAT
Treatment	Unit							
Untreated		1.0	0.7	7.7	0.3	0.00	0.0	3.0
Vydate C LV Foliar	0.33	0.3	1.0	0.7	2.0	0.00	100.0	1.0
Vydate L Injected	0.33	1.0	0.3	2.0	2.3	0.00	100.0	2.0

Insect Code		Ladybugs	Nabids	Stinkbugs	Grasshoppers	Fleahoppersd	%Control	Spiders
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/25 Plants	/25 Plants	/25 Plants
Rating Date		July 24	July 24	July 24	July 24	July 24	July 24	July 24
Trt-Eval Interval	Rate	10 DAT	10 DAT	10 DAT	10 DAT	10 DAT	10 DAT	10 DAT
Treatment	Unit							
Untreated		3.3	12.7	0.0	0.7	2.0	0.0	1.0
Vydate C LV Foliar	0.33	1.7	15.3	0.0	0.0	0.0	100.00	0.3
Vydate L Injected	0.33	1.0	18.0	0.0	0.0	0.0	100.00	1.3

Insect Code		Ladybugs	Fleahoppers	% Control	Spiders	Nabids	Grasshoppers	Fleahoppers
Rating Unit		/25 Plants	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/25 Plants
Rating Date		July 24	July 28	July 28	July 28	July 28	July 28	July 28
Trt-Eval Interval	Rate	10 DAT	2 <sup>nd</sup> ;4DA T	2 <sup>nd</sup> ;4DA T	2 <sup>nd</sup> ;4DA T	2 <sup>nd</sup> ;4DA T	2 <sup>nd</sup> ;4DA T	2 <sup>nd</sup> ;4DA T
Treatment	Unit							
Untreated		0.7	0.00	0.0	3.0	14.0	2.3	4.7
Vydate C LV Foliar	0.33	0.3	0.00	100.00	2.7	3.3	0.0	0.0
Vydate L Injected	0.33	0.0	0.00	100.00	1.3	3.0	0.0	0.0

Insect Code		% Control	Spiders	Plant Height	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower	Fleahopper
Rating Unit		/25 Plants	/25 Plants	/5 Plants	/5 Plants	/5 Plants	/5 Plants	/10 sweeps
Rating Date		July 28	July 28	July 28	July 28	July 28	July 28	July 31
Trt-Eval Interval	Rate	2 <sup>nd</sup> ;4DAT	2 <sup>nd</sup> ;4DAT	2 <sup>nd</sup> ;4DAT	2 <sup>nd</sup> ;4DAT	2 <sup>nd</sup> ;4DAT	2 <sup>nd</sup> ;4DA T	2 <sup>nd</sup> ;4DAT
Treatment	Unit							
Untreated		0.0	1.0	29.40	8.40	88.0	5.60	0.00
Vydate C LV Foliar	0.33	100.00	0.3	28.00	8.60	92.0	6.00	0.00
Vydate L Injected	0.33	100.00	1.3	26.00	8.60	86.0	5.40	0.00

Insect Code		% Control	Spiders	Nabids	Grasshoppers	Fleahoppers	% Control	Spiders
Rating Unit		/10 sweeps	/10 sweeps	/10 sweeps	/10 sweeps	/25 Plants	/25 Plants	/25 Plants
Rating Date		July 31	July 31	July 31	July 31	July 31	July 31	July 31
Trt-Eval Interval	Rate	2 <sup>nd</sup> ;7DA T	2 <sup>nd</sup> ;7DA T	2 <sup>nd</sup> ;7DA T	2 <sup>nd</sup> ;7DA T	2 <sup>nd</sup> ;7DA T	2 <sup>nd</sup> ;7DA T	2 <sup>nd</sup> ;7DA T
Treatment	Unit							
Untreated		0.0	2.0	9.7	0.3	0.7	0.00	1.0
Vydate C LV Foliar	0.33	100.00	0.3	2.3	0.0	0.0	100.0	0.3
Vydate L Injected	0.33	100.00	2.0	6.0	0.0	0.0	100.0	0.7

Insect Code		Ladybugs	Plant Height	1 <sup>st</sup> Fruiting Site	% Retention	Nodes Above White Flower	Fleahopper	% Control
Rating Unit		/25 Plants	/5 Plants	/5 Plants	/5 Plants	/5 Plants	/10 sweeps	/10 sweeps
Rating Date		July 31	August 4	August 4	August 4	August 4	August 4	August 4
Trt-Eval Interval	Rate	2 <sup>nd</sup> ;7DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T
Treatment	Unit							
Untreated		0.3	31.20	8.60	89.0	4.40	0.00	0.0
Vydate C LV Foliar	0.33	1.3	31.00	8.60	89.0	4.40	0.00	100.0
Vydate L Injected	0.33	0.3	28.80	8.80	87.0	4.20	0.00	100.0

Insect Code		Spiders	Grasshoppers	Fleahoppers	% Control	Spiders	Fleahoppers	% Control
Rating Unit		/10 sweeps	/10 sweeps	/25 Plants	/25 Plants	/25 Plants	/10 sweeps	/10 sweeps
Rating Date		August 4	August 4	August 4	August 4	August 4	August 7	August 7
Trt-Eval Interval	Rate	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;11DA T	2 <sup>nd</sup> ;14DA T	2 <sup>nd</sup> ;14DA T
Treatment	Unit							
Untreated		0.0	4.0	1.0	0.0	0.0	0.00	0.00
Vydate C LV Foliar	0.33	0.0	0.0	0.0	100.0	0.0	0.00	100.00
Vydate L Injected	0.33	0.0	0.0	0.0	100.0	0.0	0.00	100.00

Insect Code		Spiders	Grasshoppers	Fleahoppers	% Control	Spiders	Yield
Rating Unit		/10 sweeps	/10 sweeps	/25 Plants	/25 Plants	/25 Plants	Lint lbs/acre
Rating Date		August 7	August 7	August 7	August 7	August 7	October 13
Trt-Eval Interval	Rate	2 <sup>nd</sup> ;14DA T	2 <sup>nd</sup> ;14DA T	2 <sup>nd</sup> ;14DA T	2 <sup>nd</sup> ;14DA T	2 <sup>nd</sup> ;14DA T	
Treatment	Unit						
Untreated		0.3	0.0	0.0	0.0	0.7	1,340.44
Vydate C LV Foliar	0.33	0.0	0.0	0.0	100.0	0.0	1,396.88
Vydate L Injected	0.33	0.0	1.0	0.0	100.0	0.3	1,422.09

**Trial Comments:**

Despite lower infestations of cotton fleahoppers and stink bugs in the treated plots no significant yield differences occurred. Both foliar applied and injected applied of Vydate increased yields to cover control costs (\$12.00 for Vydate injected and \$18.00 for Vydate foliar applied) resulting in a increase of \$30.64 per acre and \$11.64 per acre respectfully.

# Performance of Bollgard™ and Parent Varieties – Dryland Test

Insect Code	Stand Count	Stand Count	Bollworm Eggs	Bollworm Larvae	Bollworm Eggs	Bollworm Larvae
Rating Unit	/acre	/acre	/10 Plants	/10 Plants	/10 Plants	/10 Plants
Rating Date	May-27	June-23	July 14	July 14	July 21	July 21
Treatment						
DP 237 B	4,666.7	36,666.7	0.0	0.0	0.0	0.0
<b>PARENT DP 2379</b>	4,333.3	35,000.0	0.0	0.0	0.0	0.0
PM 2326 BG/RR	4,000.0	35,333.3	0.0	0.0	0.0	0.0
<b>PARENT PM HS-26</b>	5,000.0	34,000.0	0.0	0.0	0.0	0.0
DP 2280 BG/RR	3,333.3	32,666.7	0.0	0.0	0.0	0.0
<b>PARENT PM 280</b>	5,333.3	33,000.0	0.0	0.0	0.0	0.0
LSD (P=.05)	2,889.09	3,109.75	0.0	0.0	0.0	0.0
Standard Deviation	1,588.15	1,709.45	0.0	0.0	0.0	0.0
CV	35.73	4.96	0.0	0.0	0.0	0.0
Grand Mean	4,444.44	34,444.45	0.0	0.0	0.0	0.0

Insect Code	Bollworm Eggs	Bollworm Larvae	Bollworm Damage Squares	Plant Height	1 <sup>st</sup> Fruiting Site	% Retention
Rating Unit	/10 Plants	/10 Plants	/10 Plants	/5 Plants	/5 Plants	/5 Plants
Rating Date	August 4	August 4	August 4	August 4	August 4	August 4
Treatment						
DP 237 B	0.0	0.0	0.0	15.03	8.67	87.80
<b>PARENT DP 2379</b>	0.0	0.0	0.0	14.60	9.47	91.30
PM 2326 BG/RR	0.0	0.0	0.0	14.83	9.00	90.47
<b>PARENT PM HS-26</b>	0.0	0.0	0.0	14.77	9.00	89.80
DP 2280 BG/RR	0.0	0.0	0.0	14.67	8.80	86.10
<b>PARENT PM 280</b>	0.0	0.0	0.0	15.60	9.47	81.33
LSD (P=.05)	0.0	0.0	0.0	1.428	1.149	7.614
Standard Deviation	0.0	0.0	0.0	0.785	0.631	4.186
CV	0.0	0.0	0.0	5.26	6.96	4.77
Grand Mean	0.0	0.0	0.0	14.92	9.07	87.80

Insect Code	Nodes Above White Flower	Plant Height	1 <sup>st</sup> Fruiting Site	% Retention	Yield Lint	Yield Differences
Rating Unit	/5 Plants	/5 Plants	/5 Plants	/10 Plants	lbs/acre	Lint lbs/acre
Rating Date	August 4	August 4	August 4	August 4	September 25	
Treatment						
DP 237 B	4.00	16.73	8.33	30.17	228.78	54.80
<b>PARENT DP 2379</b>	3.93	16.80	8.13	37.33	173.98	
PM 2326 BG/RR	3.80	16.33	8.07	38.67	217.33	29.37
<b>PARENT PM HS-26</b>	3.40	16.73	7.97	34.00	187.96	
DP 2280 BG/RR	6.37	16.80	8.47	33.67	187.72	21.08
<b>PARENT PM 280</b>	3.60	16.73	8.07	34.67	166.64	
LSD (P=.05)	0.816	0.994	1.497	17.945	70.233	
Standard Deviation	0.449	0.546	0.823	9.864	38.607	
CV	12.02	3.27	10.09	28.39	19.63	
Grand Mean	3.73	16.69	8.16	34.75	193.73	

**Site description:** Planted May 19.

**Trial Comments:**

Two of the three Bollgard™ failed to produce suffice yields to compensate for the technology rental fee increasing the monetary loss experienced. Only DP 237B covered technology rental fees.



# Impact of Planting Date and Different Insect Control Strategies on Dryland Production

Insect Code		Stand Count	Adult Fleahopper	1 <sup>st</sup> Fruiting Site	% Retention	NAWF	1 <sup>st</sup> Fruiting Site
Rating Unit		/acre	/10 Plants	/5 Plants	/5 Plants	/5 Plants	/5 Plants
Rating Date		May 29	July 3	August 4	August 4	August 4	August 20
Treatment	Rate LB A/A						
PM HS-26		34,333.3	0.07	9.87	91.93	4.67 bc	8.60
Planted May 19	Untreated						
PM HS-26		34,000.0	0.07	8.40	86.47	5.40 abc	8.27
Planted June 12	Untreated						
PM HS-26		34,666.7	1.0	9.17	90.67	4.53 c	8.60
Planted May 19 Vydate	0.125						
PM HS-26		35,333.3	0.3	9.27	92.77	6.20 ab	8.80
Planted June 12 Vydate	0.125						
PM 280		36,000.0	0.0	9.20	88.07	4.67 bc	8.53
Planted May 19	Untreated						
PM 280		35,666.7	0.0	9.17	82.90	5.80 abc	8.53
Planted June 12	Untreated						
PM 280		36,000.0	0.0	8.63	93.10	4.27 c	8.73
Planted May 19 Vydate	0.125						
PMr 280		35,666.7	0.0	9.00	93.63	6.20 ab	8.98
Planted June 12 Vydate	0.125						
LSD (P=.05)		3,577.55	0.80	0.859	8.830	1.004	0.492
Standard Deviation		2,042.70	0.46	4.91	5.042	0.573	0.281
CV		5.87	136.93	5.4	5.61	10.49	3.28
Grand Mean		34,791.67	0.33	9.09	89.94	5.47	8.55

Insect Code		% Retention	Yield Lint
Rating Unit		/5 plants	/acre
Rating Date		August 20	September 25
Treatment	Rate LB A/A		
PM HS-26		32.3	223.25
Planted May 19	Untreated		
PM HS-26		33.3	68.41
Planted June 12	Untreated		
PM HS-26		25.3	239.67
Planted May 19 Vydate	0.125		
PM HS-26		35.0	86.41
Planted June 12 Vydate	0.125		
PM 280		38.7	194.37
Planted May 19	Untreated		
PMr 280		37.3	71.97
Planted June 12	Untreated		
PM 280		25.3	208.88
Planted May 19 Vydate	0.125		
PM 280		36.3	78.13
Planted June 12 Vydate	0.125		
LSD (P=.05)		10.63	104.168
Standard Deviation		6.07	59.478
CV		18.41	40.63
Grand Mean		32.96	146.39

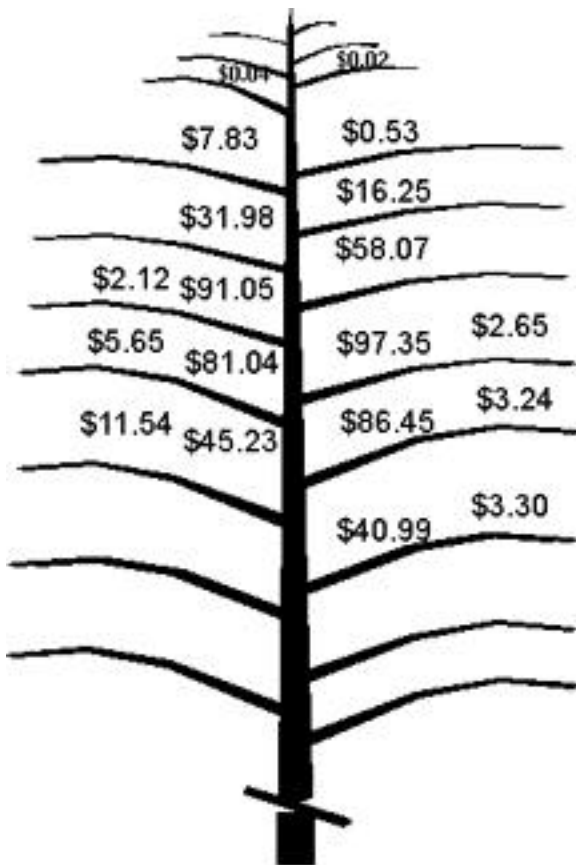
**Trial Comments:**

Light insect pressure dominated in 2003. Hot, dry conditions prevailed most of the summer retarding plant development and lint production. There were no significant differences in yields between varieties. May planted cotton out-produced June planted cotton regardless the spray regime. Highest yields resulted in Vydate .125 lb ai treated plots. Despite low yield increases all treatments (except PM280 planted June 12th) compensated for control expenses.

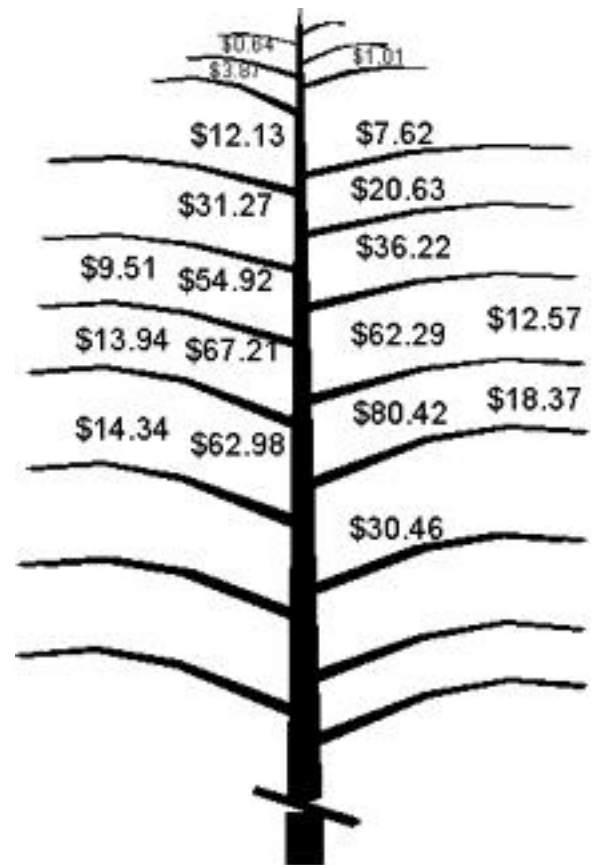
## Cotton Termination Based on 4NAWF Irrigated Cotton

Insect Code	Stand Count	Stand Count	Bollworm Damage Squares	Bollworm Damage Squares	Bollworm Damage Squares	% Retention	Yield Lint lbs
Rating Unit	/acre	/acre	/10 Plants	/10 Plants	/10 Plants	/5 Plants	lbs/acre
Rating Date	June 9	Jun 23	July 21	July 28	August 4	August 4	October 21
Treatment							
DP 33 B	34,666.7	33,000.0	0.0	0.0	0.0	90.0	1,126.81
PM 2326 BG/RR	36,000.0	35,000.0	0.0	0.0	1.7	91.3	1,065.73
DP 5415	34,000.0	33,666.7	0.0	0.0	0.0	91.0	1,038.53
PM HS-26	32,000.0	33,000.0	0.0	0.0	1.3	90.7	1,029.31
LSD (P=.05)	3460.58	3105.97	0.0	0.0	1.97	6.09	280.800
Standard Deviation	1752.05	1554.56	0.00	0.00	0.99	3.05	140.543
CV	5.07	4.62	0.0	0.0	131.47	3.36	13.2
Grand Mean	34166.67	33666.7	0.0	0.0	0.75	90.75	1065

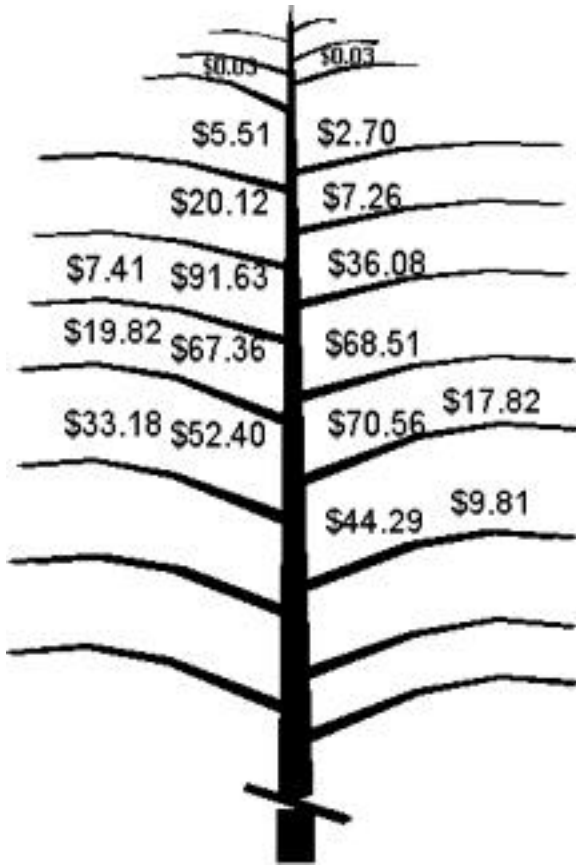
DP 33B



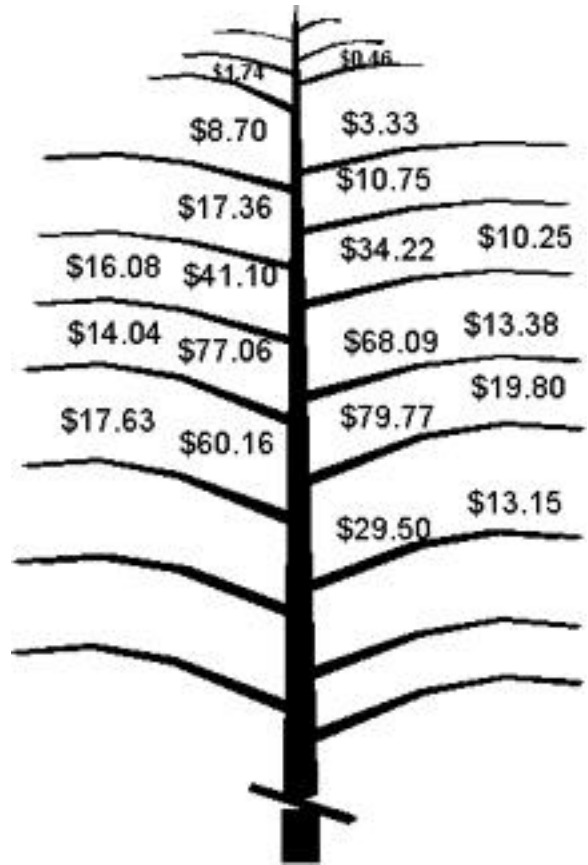
DP 5415



PM 2326 BG/RR



PM HS-26



Average lint value = **\$ 553.85**

BOLL CONTRIBUTION BY POSITION

1st Position - 87%

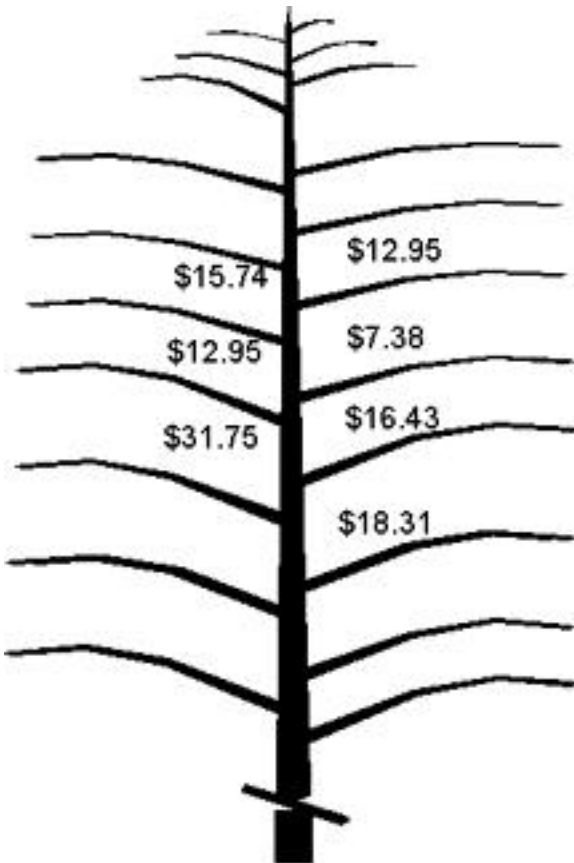
2nd Position - 13%

**Site description:** Planted May 23, Irrigated 5 times at 4 inches per irrigation.

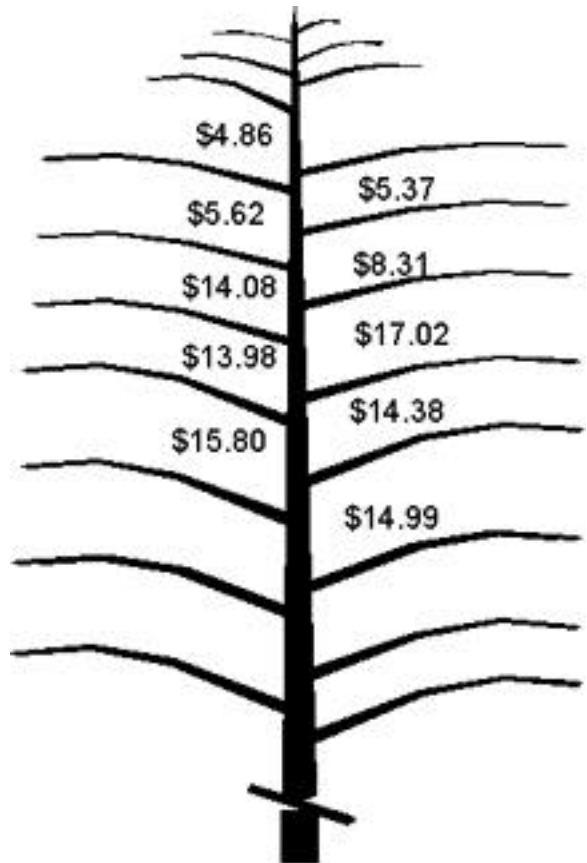
## Cotton Termination Based on 4NAWF Dryland Cotton

Insect Code	Stand Count	Stand Count	% Retention	NAWF	NAWF	Yield Lint lbs
Rating Unit	/acre	/acre	/5 Plants	/5 Plants	/5 Plants	lbs/acre
Rating Date	June 5	June 19	July 15	July 21	August 11	September 25
Treatment						
PM 2280 BG/RR	34,000.0	33,666.7	90.57	7.00	1.73	226.73
PM 2326 BG/RR	34,333.3	33,666.7	93.67	6.50	1.67	242.06
PM HS-26	33,666.7	32,666.7	97.33	6.33	2.03	194.30
PM 280	34,333.3	34,000.0	94.43	6.00	1.83	180.44
LSD (P=.05)	4064.72	3262.67	3.144	0.999	0.395	60.260
Standard Deviation	2034.43	1632.99	1.574	0.500	0.198	30.161
CV	5.97	4.87	1.67	7.74	10.89	14.30
Grand Mean	34083.33	33500.00	94.25	6.46	1.82	210.88

PM 2280 BG/RR

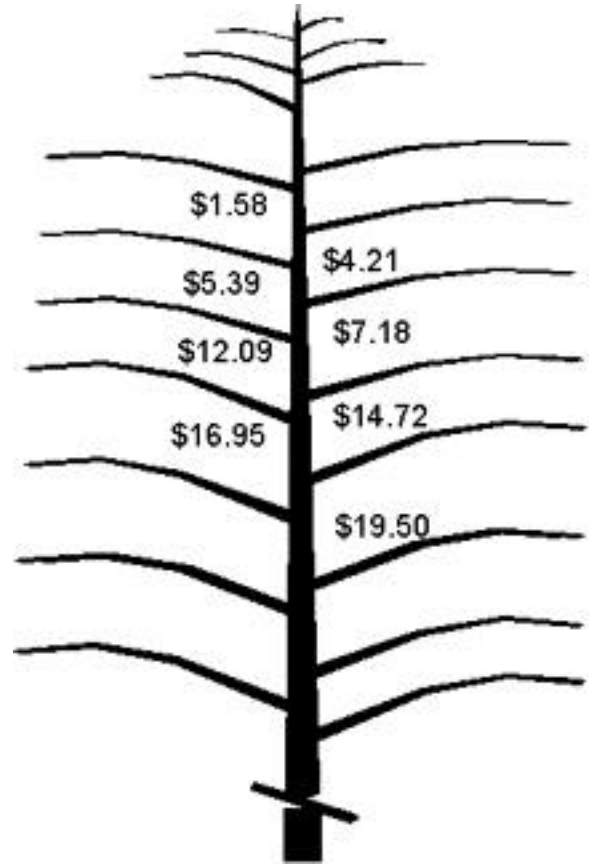
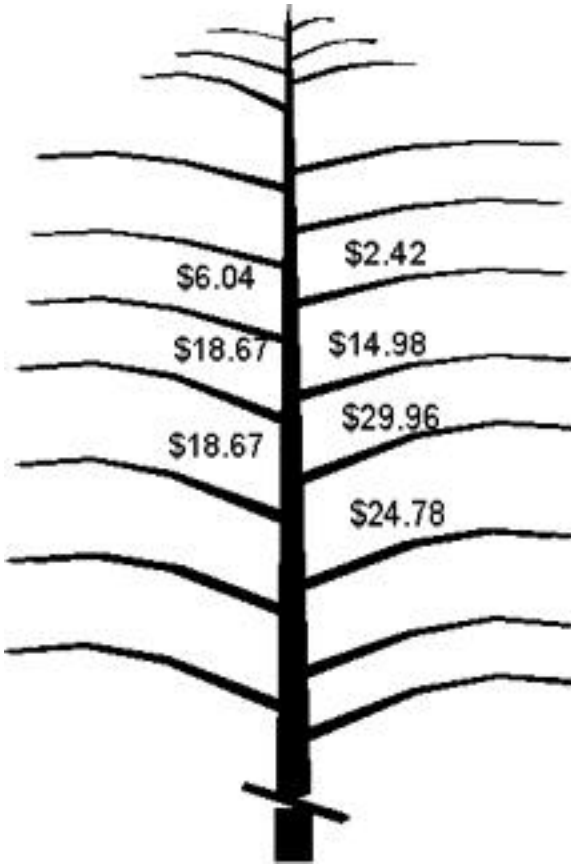


PM 280



PM 2326 BG/RR

PM HS-26



Average lint value = \$ 109.62

Boll Contribution by position

1st Position -100%

Site description: Planted May 19.

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