



Response of Deltapine[®] Cotton Products to Plant Growth Regulators in The Carolinas

Trial Objective

- Cotton varieties respond differently to plant growth regulator (PGR) treatments. It is important to understand the response of new cotton varieties to PGR application rates.
- The objective of this experiment was to evaluate the response of current and new Deltapine[®] cotton varieties to PGR application rates.

Research Site Details

Locations

- Seven locations were used:
 - 2017: Kenly, NC; Jackson, NC; Plymouth, NC; Pantego, NC; Belvidere, NC; Maxton, NC; and Blackville, SC
 - 2018: Kenly, NC; Jackson, NC; Como, NC; Pantego, NC; Belvidere, NC; Maxton, NC; and Blackville, SC
- Two locations were small-plot designs with four replications. All other locations were single strip trials.

Treatments

- Plant growth regulator treatments included two approaches to PGR management, with the PGR used selected by the grower.
 - Passive: Standard PGR application schedule and rate for local conditions.
 - Aggressive: 1.5 to 2x rate of the passive treatment.

Understanding the Results

- Results for analysis of variance indicated that there was no significant interaction for variety x PGR treatment for plant height or lint yield; however, there were numerical differences that were of interest.
- PGR treatments were significantly different from one another for plant height whereas varieties were significantly different from one another for lint yield.
- Data presented are for numerical differences that were observed for variety x PGR treatments.



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Table 1. Two-year average plant height and lint yield observations. Treatment averages are two-year averages (2017-2018) except for DP 1916 B3XF (2018 only).

Treatment	Deltapine [®] Cotton Variety	Plant Height (inches)	Plant Height Change* (%)	Average Lint Yield** (lb/acre)	Average Lint Yield Change (%)
Passive	DP 1646 B2XF	47.2		1273	
Aggressive	DP 1646 B2XF	43.4	-8.1	1291	1.4
Passive	DP 1725 B2XF	46.1		1142	
Aggressive	DP 1725 B2XF	43.1	-6.5	1167	2.1
Passive	DP 1835 B3XF	45.2		1070	
Aggressive	DP 1835 B3XF	40.2	-11.1	1122	4.6
Passive	DP 1840 B3XF	44.1		1085	
Aggressive	DP 1840 B3XF	40.5	-8.2	1072	-1.2
Passive	DP 1851 B3XF	46.6		1124	
Aggressive	DP 1851 B3XF	43.5	-6.7	1161	3.0
Passive	DP 1916 B3XF***	38.0		1083	
Aggressive	DP 1916 B3XF***	34.0	-10.5	1091	1.0

*Plant height observations are from 6 locations in 2017 and 2 locations in 2018.

**Average lint yield data observations are from 6 locations in 2017 and all locations in 2018.

***DP 1916 B3XF was used in 2018 only.

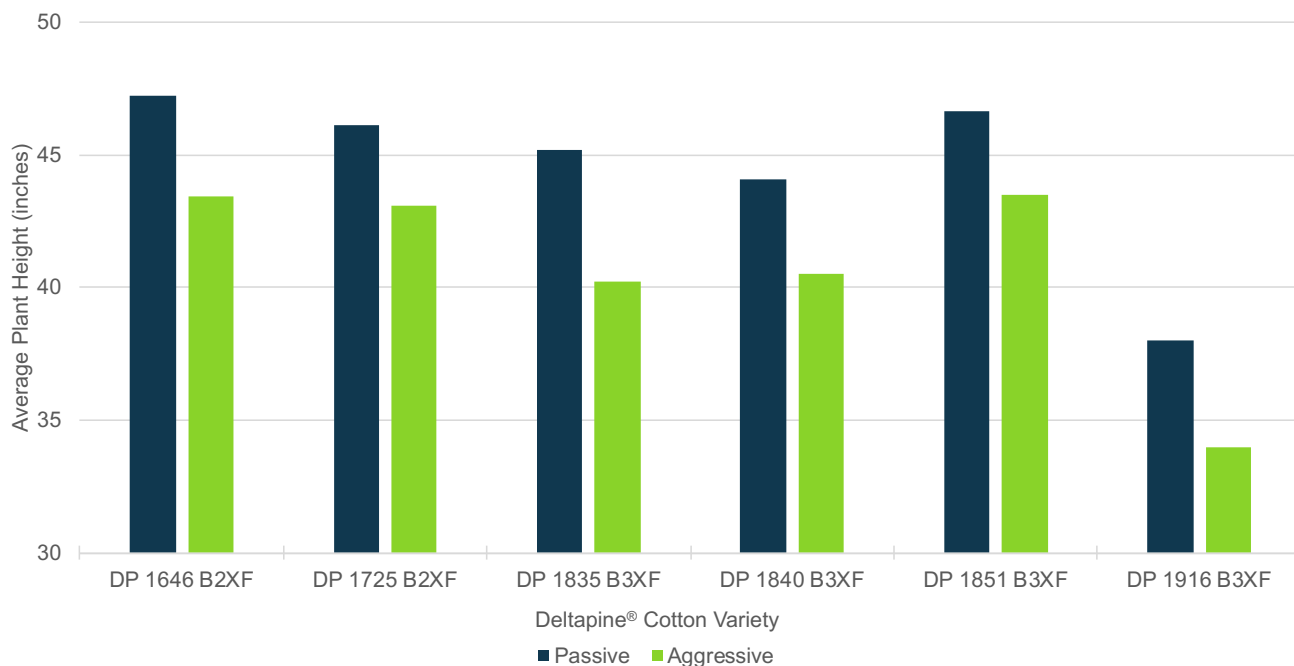


Figure 1. Average plant height observations by cotton variety and PGR treatment.



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- DP 1835 B3XF and DP 1916 B3XF were the most responsive for plant height reductions with an aggressive PGR treatment.
- DP 1725 B2XF and DP 1851 B3XF were the least responsive for plant height reductions with an aggressive PGR treatment.

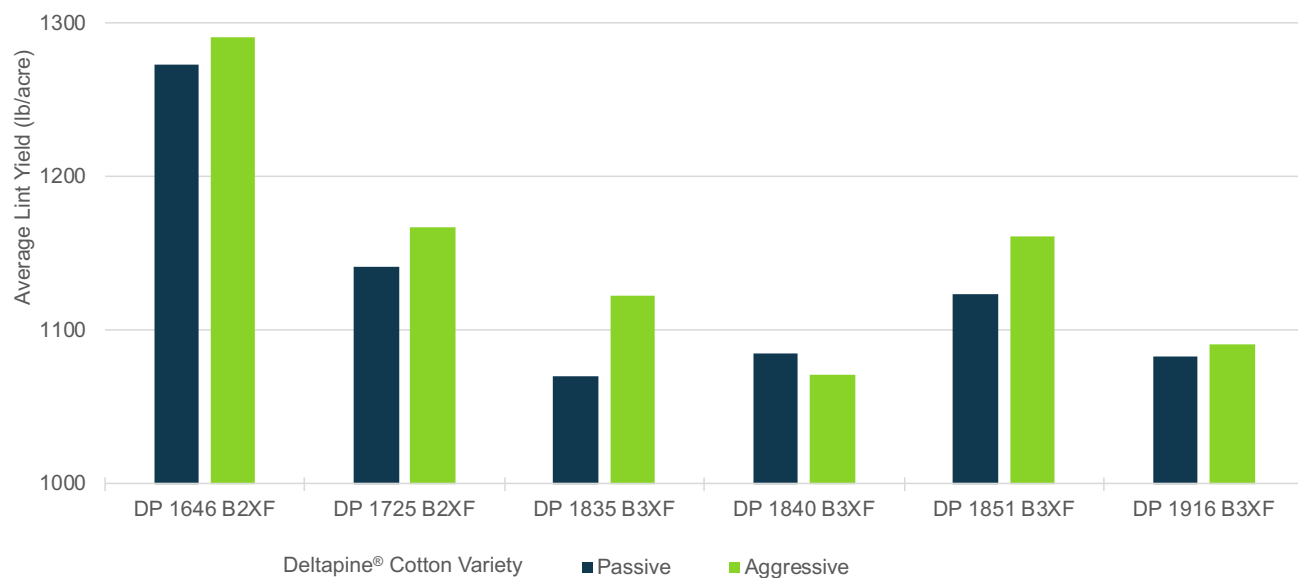


Figure 2. Average lint yield by cotton variety and PGR treatment.

- An increase in lint yield was observed when applying an aggressive PGR treatment for all cotton varieties tested with the exception of DP 1840 B3XF.

What Does This Mean for Your Farm?

- The results from this study demonstrate how PGR treatments can affect cotton varieties differently with respect to growth habit and yield potential.
- When selecting cotton varieties to plant, always consider the growth habit of the variety and the type of the environment it will be grown.

Legal Statements

The information discussed in this report is from a multiple site, replicated demonstration. This information piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

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