

**COTTON VARIETAL RESPONSES TO PLANT
GROWTH REGULATOR STRATEGIES**

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Abstract

Genetically engineered cotton (*Gossypium hirsutum*) varieties that are resistant to certain herbicides or insects are fast becoming an important asset to producers. While it is well documented how these varieties respond to herbicide applications and insect attacks, their response to plant growth regulators (PGRs) is unknown. A study was conducted in 1997 to address this question. Cotton varieties DPL 5690 Roundup Ready®, Stoneville BXN 47 Buctril® resistant, DPL 33B, DPL 5409, TAMCOT Sphinx, and DPL 50 were evaluated in this test. The PGR programs utilized are detailed in Table 1. Lint yields between the varieties were different with BXN 47 yielding the most (Table 2). This difference is primarily attributed to increased ginout percentage. All varieties responded similarly to the PGR programs. Any treatment containing mepiquat chloride (MC) significantly reduced plant heights compared to the control. The PGRs did not influence boll numbers or distribution. Lint yields were not significantly increased with any PGR program. The MEPRT treatment increased seed size compared to the control.

Table 2. Varietal yields and ginout percentages.

Variety	Lbs lint/A	Percent ginout
DPL 5690 RR	1604 bc*	40.1 c**
Stoneville BXN 47	1761 a	43.9 a
DPL 33B	1747 ab	39.7 c
DPL 5409	1709 abc	41.7 b
Sphinx	1604 bc	39.1 cd
DPL 50	1570 c	38.0 d

**Pr* > 0.07

***Pr* > 0.0001

Table 1. PGR programs utilized.

Program	Compound	Rate	Timing
Control			
MEPRT	Mepiquat chloride		Applied as needed According to the PIX stick
PIX	PIX	8 oz/A	Match-head square
	PIX	8 oz/A	Early bloom
PGR-IV	PGR-IV	2 oz/A	2-leaf
	PGR-IV	2 oz/A	Pin-head square
	PGR-IV	2 oz/A	Early bloom
MFPGR	PIX	8 oz/A	Match-head square
	PGR-IV	4 oz/A	Early bloom
	PGR-IV	4 oz/A	Early bloom + 10d
PBT	Cytoplex	2 oz/A	5-leaf
	Slo-U-Gro	2 lb/A	5-leaf
	Cytoplex	4 oz/A	Match-head square
	Sol-U-Gro	3 lb/A	Match-head square
	Microplex	0.25 lb/A	Match-head square
	Cytokinin	6 oz/A	1 st bloom
	Nutrileaf	5 lb/A	1 st bloom
	Microplex	0.5 lb/A	1 st bloom
	Cytokinin	8 oz/A	Mid-bloom
	Crop Finisher	5 lb/A	Mid-bloom