

PLANT GROWTH REGULATOR EFFECTS ON LINT QUALITY AND YIELD

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Introduction

The use of Plant Growth Regulators is common among Georgia cotton producers, especially with the wide-spread adoption of DP 555 BGRR. While the yield response of cotton to PGR use is erratic, producers readily recognize that these products result in a more manageable crop. As with many other chemical tools there is a wide variety of products to choose from. In addition, there are also other “yield and quality enhancing” products that are marketed.

The objective of this research was to examine the yield and lint quality response of cotton to three of the more commonly used PGRs and Chaperone which is touted to be both a yield and quality enhancing product.

Materials and Methods

A large plot trial was established in Evans Co. GA with DP 555 BGRR planted following onions. Treatments are listed in Table 1.

Table 1. PGR treatment, rate, and timing of application, Evans Co., GA 2004.

Treatment	PGR	Date of Application			
		6-Jul	20-Jul	3-Aug	18-Aug
1	Pentia	8 oz	8 oz	16 oz	16 oz
2	Mepichlor	8 oz	8 z	16 oz	16 oz
3	Pentia Chaperone	8 oz	8 oz	16 oz 5 oz	16 oz 5 oz
4	Mepex Ginout	8 oz	8 oz	16 oz	16 oz

Treatments were arranged in a Randomized Complete Block Design replicated four times. Individual plots were 2.5-acres in size. Plot yields were obtained by harvesting the four center rows of each plot. Lint quality was assessed in two ways. First a 50-lb sample was obtained from the cotton harvested in the four center rows. These samples will be run through the microgin in Tifton. This data was unavailable at this writing. Secondly, the remaining cotton from each treatment was moduled separately, combining the cotton from a single treatment from each replication. The middle five bales ginned from each of these modules were then utilized to make treatment comparisons. Quality data from the modules is presented for all treatments except for the Mepex Ginout treatment, as this treatment was not moduled on the same day as the

other treatments. Microgin data will be available from all treatments once ginning has been completed.

Results and Discussion

All data is presented in Table 2. Yield was not different between the treatments, further supporting early research indicating similar performance of mepiquat containing PGRs. The addition of Chaperone provided no further yield enhancement. Lint quality as assessed via a commercial gin was also not influenced by the PGR treatments.

Table 2. Lint yield and quality of DP 555 BGRR as affected by PGR treatments, Evans Co. GA 2004.

Treatment	PGR	Lint Yield	Length	Uniformity	Micronaire	Strength	Loan Value
		lbs A ⁻¹	mm	%		g tex ⁻¹	\$ lb ⁻¹
1	Pentia	965.8 a	109.0 a	79.8 a	3.54	29.14 a	0.566
2	Mepichlor	989.3 a	110.8 a	79.6 a	3.62	29.58 a	0.571
3	Pentia Chaperone	972.4 a	111.6 a	80.2 a	3.60	29.74 a	0.572
4	Mepex Ginout	988.7 a	-	-	-	-	-
	<i>Pr>f</i>	0.1580	0.0616	0.5462	0.2181	0.1365	0.0950
	C.V.	6.08	1.43	1.07	1.97	1.53	0.74