PERFORMANCE OF GROWTH REGULATORS IN OKLAHOMA COTTON

Shane Osborne
J.C. Banks
Oklahoma State University
Altus, OK
Julian Lowell
Nathan Helm
Elizabeth Wallace
Western Oklahoma State University
Altus, OK

Abstract

Growth Regulators (mepiquat chloride) have been applied commercially by cotton producers for over 20 years. Typically the benefits of these products are reduced plant height, increased light penetration into the canopy, earlier maturity, and occasionally increased yield. The recent (within the last few years) addition of enhanced growth regulator products (Pentia, Mepex Ginout, and Stance) has led to producer questions concerning their performance compared to the traditional products. Therefore, six growth regulator treatments were applied to FM 9063 B2F beginning at matchhead square in order to compare their performance. The objectives of this evaluation were to determine the effects of these treatments on plant height, maturity, lint yields and fiber quality. The six treatments are presented below. All treatments were applied in 10 gallons of water with flat fan spray tips at 26 PSI. Plant heights were taken following each treatment. Nodes above white flower counts were taken at the typical cutout date (8/22/07) and nodes above cracked boll counts were taken October 4th. Fiber samples from each treatment were sent to the International Textile Center at Lubbock, Texas where HVI fiber analysis was performed in order to observe any differences in lint quality.

Trt No.	Product	Rate	Timing
1	Mepex Mepex	8 oz/A 10 oz/A	Matchhead sq. 14 DAIT
2	Mepex Ginout Mepex Ginout	8 oz/A 10 oz/A	Matchhead sq. 14 DAIT
3	Stance Stance	1.5 oz/A 2 oz/A	Matchhead sq. 14 DAIT
4	Stance Stance	2 oz/A 3 oz/A	Matchhead sq. 14 DAIT
5	Pentia Pentia	8 oz/A 10 oz/A	Matchhead sq. 14 DAIT
6	Stance Stance Stance	2 oz/A 3 oz/A 3 oz/A	Matchhead sq. 14 DAIT 5 NAWF
7	Untreated		

Plant height measurements were taken three times throughout the growing season, July 17th, July 30th, and August 27th. The Mepex and Stance treatments significantly reduced plant height compared to the untreated at the early evaluation. By the end of the growing season (August 27th evaluation) all growth regulator treatments significantly reduced plant height 4.7 to 7.7 inches compared to untreated plots. Plant heights from treated plots ranged from 20.75-23.8 inches while untreated plots were measured at 28.45 inches. Little maturity difference was observed between treatments from the counts of nodes above white flower. Treatment 1 (Mepex alone) significantly reduced nodes above white flower compared to the untreated plot (from 3.65 to 2.9). All other treatments were similar to the untreated plot. The later observation of nodes above cracked boll revealed more significant differences between treatments. Treatments 1, 2, 4 and 6 (Mepex, Mepex Ginout and two Stance, respectively) resulted in the greatest reduction in nodes above cracked boll compared to the untreated. In treatments 1, 2 and 4 (Mepex, Mepex Ginout and the low rate structure of Stance) NACB counts ranged from 1.58-1.75. Three applications of Stance resulted in

the greatest reduction in NACB with a count of 1.08. The nodes above cracked boll count in untreated plots was 3.15. Two row by 30' plots were harvested with a brush stripper on the 1st of November. Yield samples were ginned and fiber samples were sent to the International Textile Center at Lubbock, Texas for HVI analysis. No growth regulator treatment increased lint yield compared to the untreated check. However plots treated with Pentia did produce more lint per acre than plots treated with Mepex. Results of HVI fiber analysis indicated no significant differences in micronaire, length, strength or Uniformity compared to the untreated check.