

**FARM VERIFICATION OF ACTIVE BLOOM
APPLICATIONS OF PGR-IV TO ENHANCE
YIELD AND MATURITY**

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Abstract

Typical applications of PGR-IV include either seed treatment or in-furrow at planting (1 oz.), pinhead square (2 ozs. on a band), and Early Bloom (4 ozs. broadcast). Mepiquat chloride is used between PHS and EB if height control is needed. Research at Texas A & M and University of Arkansas indicates that PGR-IV is involved in the manufacture and translocation of carbohydrates to both the root system and to reproductive structures. Field observations of a single application of 4 ozs. PGR-IV made during the third to fourth week of active bloom indicated an increase in earliness and yield. This supported six (6) years of research at Texas A&M on rate response effects of PGR-IV on delayed bloom applications (80.7 lbs. average increase). Based on these results an on-farm protocol was developed to evaluate Active Bloom applications of PGR-IV. Trials were in Arkansas (27), Louisiana (31), Mississippi (30), and Texas (24), for a total of 112 locations. Split plot evaluations were performed on fields (40 acres minimum) that had not previously been treated with PGR-IV. Measurements were collected from the treated and untreated portions at each location. Uppermost first position blooms were tagged at 5 locations with 5 plants per location, in both sides of the field (total of 50 plants per field). At harvest cotton was separated based on its position either above or below the tagged boll, and green bolls were counted and weighed to determine maturity. Positive responses to yield were recorded across locations. Lint pound increases were, AR 85 lbs., LA 101 lbs., MS. 83 lbs., TX (S.) 91 lbs., TX (W) 72 lbs. Responses were consistent even under less than ideal growing conditions that were experienced across locations in 1995. Positive yield increases occurred at 77 % of AR locations, 77% of LA. locations, 83 % of MS locations, 93 % of S. TX locations 81 % of W. TX locations. Maturity was also affected with 69 % of all locations having greater than a 5 % increase in maturity index, and 39 % of locations had greater than a 10 % increase in maturity index. Yield was separated in relation to the uppermost tagged bloom (day of application), and indicated that approximately 70 % of the increased yield was associated with bolls from below the tagged bloom.