

**EVALUATION OF AN EXPERIMENTAL PLANT
GROWTH REGULATOR ON TWO CULTIVARS**
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Abstract

Research was conducted in 1997, 1998 and 1999 at the Plant Science Research Center, Mississippi State, MS to evaluate an experimental plant growth regulator (BAS1300W1) on two cotton (*Gossypium hirsutum L.*) cultivars, Stoneville 474 and Sure-Grow 125. There were six treatments: (1) 0oz./A (untreated), (2) 8oz.(2x)=16oz./A with the first application applied at early bloom and a second application two weeks later, (3) 4oz.(4x)=16oz./A, (4) 6oz.+12oz.(2x)=30oz./A, (5) 12oz.(3x)=36oz./A, and (6) 6oz.+16oz.(2x)=38oz./A. In treatments 3 through 6 the first application was at matchhead square and the following applications two weeks apart. The field plot design was a randomized complete block with a split plot treatment arrangement with cultivars as whole plots and treatments as sub plots. Measurements taken were total lint yield, lint yield distribution by fruiting positions, seed size, lint percentages, plant height, leaf area, total number of nodes and reproductive to vegetative tissue ratios. Data are reported for 1999 only. There were no treatment by cultivar interaction for any trait. Both cultivars performed the same for each treatment. All BAS1300W1 treatments matured three to six days earlier than the untreated. Treatments 4, 5 and 6 produced significantly more lint yield and had larger seed than treatment 2 or the untreated, but had significantly lower lint percentages. No significant differences existed among treated and the untreated for lint yield produced from first and third position bolls. Treatments 4 and 6 produced significantly higher lint yields for second position bolls than treatment 2 or the untreated. Plant height, leaf area and the total number of nodes produced were significantly reduced and reproductive tissue to vegetative tissue ratios were significantly increased by treatments 4, 5 and 6. These results suggest that in 1999 the higher levels of BAS1300W1 with multiple applications were the most efficient in distributing photosynthates into reproductive tissue. This resulted in positive effects on yield and the overall plant structure in 1999. However, there were significant year by treatment interactions for all traits except lint percent and seed size. Thus, the performance of the experimental plant growth regulator was highly effected by the environment.