

IMPACT OF MANAGEMENT ON COTTON GROWTH AND DEVELOPMENT

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Abstract

A study was conducted in West Tennessee on cotton under dryland conditions evaluating the impact of sequential applications of Miller Sol-U-Gro (0.6-2.4-0.015 ai or 5lbs product/ acre), Miller Cytokin, v/v proportional to the PIX (mepiquat chloride) rate, Miller 20-0-10wB (1-0-0.5-0.126S-0.3B ai or 5 lbs product) and Micro-Flo PGR-4 at 4 oz/acre over a base treatment of all University of Tennessee recommended practices for cotton production. COTMAN 97 was used, together with standard insect scouting, to time all applications. Pix was used as determined by COTMAN 97. Cytokin, Miller Sol-U-Gro, and Pix were applied at pinhead and matchhead square while 20-0-10wB was applied at early bloom and peak bloom with PGR-4 tank mix in the peak bloom application. The study was replicated five times with one replication each planted to BXN-47, DPL5409, STV132, PM1215, and PM1215RR. Each variety/rep was evaluated under the above treatment regime and plots were 25 acres each. All spray applications were made with ground custom application equipment at 10 gpa. Plots were harvested with standard spindle harvest equipment with twice over harvest. One full trailer or module was harvested per plot. The area harvested was measured after harvest to determine yield. Lint yield was determined following ginning.

This treatment of sequential applications, as described, significantly improved total bolls per node and first position bolls per node as compared to University recommended practices only. The treatment, as described, had a numerical improvement in yield of 103 lbs lint/A, with the University recommended base treatment at 983 lbs lint/A and the intensely managed cotton at 1,086 lbs lint/A. These highly managed treatments, both the University base treatment and the described treatment, improved yields over the county average of 635 lbs lint per acre, with the improvement being 348 lbs and 451 lbs per acre respectively.

These results indicate that the use of University of Tennessee Recommended Practices together with careful insect scouting and COTMAN 97 can significantly improve cotton yields in West Tennessee over that obtained by the average cotton grower with the potential of further increased yields with more intensive use of plant growth regulators together with early and mid-season foliar feeding.