

Determining Optimum Sidedress Nitrogen Requirements for Cotton Receiving Preplant Applications of Broiler Litter

A research summary submitted to the Alabama Cotton Commission

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Litter was applied at the rate of 2 tons per acre to Field 1 (Franklin County) on November 12, 2005 and to Field 2 (Lawrence County) on March 4, 2006. PhytoGen 355 cotton was planted in 30 inch rows in mid-April and grown using standard practices. Three rates of liquid sidedress N (0, 50 and 90 pounds per acre) were applied May 6 to plots that were 12 rows wide and extended the length of each field. Liquid N-Sol was knifed into the soil using a coulter knife applicator. There were 4 replications of each sidedress N rate. Leaf samples were collected from each plot July 12 for measurement of total nitrate - nitrogen. Plots were harvested in late September. Yields from each plot were taken using a 6 row John Deere 9986 picker equipped with a yield monitor.

Rainfall was light during the growing season especially at Field 2. Unfortunately, yields were obtained from only two 0 N plots, three 40 N plots, and three 80 N plots in Field 2. Average yields were very similar for all three sidedress N rates in both fields which resulted in no return for any sidedress nitrogen application. Leaf tissue analyses revealed that the average nitrate - N concentration was numerically greater where sidedress N was applied than where none was applied in both fields.