OPTIMIZING REVENUE THROUGH DEFOLIATION TIMING

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Abstract

The objective of this three-year study was to determine if the Hal Lewis method could be incorporated with harvest aid COTMAN to evaluate optimum defoliation timing. Initiated in 2005, treatments were defoliation timing at 750, 850, 950, and 1050 heat units (HU) beyond cutout (NAWF=5). Study sites were located in south Arkansas utilizing cotton varieties DPL445BGRR, DPL555BGRR, ST4554B2RF, and ST5599BR. Cotton samples were taken from study fields prior to defoliation to acquire predicted micronaire values for studying the Hal Lewis method. There were no significant differences among treatments when data were averaged over year and variety; however, cotton defoliated at 950 HU had the greatest total value of 659.26 $/A. Significant differences were found for yield in 2007 with cotton defoliated at 1050 HU producing greatest lint yields of 1320.78 lb/A and net loan price in 2005 and 2006 when data were analyzed by year. Significant differences also occurred when data were analyzed by variety. Differences in lint yield arose from ST4554B2RF analysis with cotton defoliated at 1050 HU producing significantly greater yields than cotton defoliated at 750 HU and in total value for variety ST5599BR where cotton defoliated after 850 HU were more profitable. Results indicate that variety selection has the greatest impact on defoliation timing. Average predicted micronaire was found to be comparable to average actual micronaire values indicating that the Hal Lewis method is a valuable micronaire estimation tool. Yet, other factors may affect the applicable nature of the Hal Lewis method for cotton producers. Results indicate that variety is an important factor when selecting defoliation timing. Defoliation at 850 HU generally is the most optimal timing for cotton production in south Arkansas.