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COUNTY BASED EARLY WARNING PROGRAM FOR MICRONAIRE ESTIMATION UTILIZING THE HAL LEWIS PROCEDURE FOR PREDICTING FIELD MICRONAIRE

Brian Weatherford and W.C. Robertson
Cooperative Extension Service
University of Arkansas
Little Rock, AR

Abstract

The timing of defoliation is critical to insure optimum yield and fiber quality. The use of micronaire testing to determine the optimum time to defoliate can reduce the risk of discounts from high micronaire. A program such as the Hal Lewis method would be invaluable to producers in Arkansas if it were consistent across locations and varieties. The objectives of this study were to evaluate the Hal Lewis procedure in northern, central, and southeast areas in Arkansas and to investigate possible interactions with varieties. Samples where collected from 93 fields with 13 different varieties, which covered 12 counties across the cotton growing areas in Arkansas. Eight plants from four areas were sampled from each field. Each sample was hand picked and consisted of all the first position open bolls (0 to 4 bolls) from the lowest four fruiting branches. Fields were sufficiently mature to insure that these positions were open, fluffed and dry when picked. Samples were then ginned and classed for micronaire. Based on the micronaire value and defoliation timings, a predicted micronaire was assigned to each field. Micronaire adjustments were made for temperature conditions during boll fill as directed in the Hal Lewis procedure. No significant differences were seen for the predicted micronaire versus the actual field micronaire across the three locations sampled. The predicted micronaire values compared to the actual micronaire values did not vary differently for any of the 13 varieties tested. The micronaire of the 93 fields were within .02 of the state's average (4.60) assuming 60% to 65% defoliation timings. Micronaire in the discount ranges of 5.0 to 5.2 and 5.3 or greater was also comparable to the state's average. Location and variety appears to not to be a factor in predicting micronaire using the Hal Lewis procedure across the state. Samples collected from 93 fields with 13 different varieties across 12 counties in Arkansas closely mirrored the cotton fiber quality of the state's 930,000 harvested acres, with regards to micronaire, as reported by USDA/AMS.