

DEVELOPMENT OF AN INDUSTRY-WIDE STANDARD FOR LEAF HAIRINESS**G.D. Morgan****Texas A&M AgriLife Extension Service****College Station, TX****F. Bourland****University of Arkansas****Keiser, AR****L. Day****University of Georgia****Tifton, GA****D. Fromme****LSU AgCenter****Alexandria, LA****J. Dever****Texas A&M AgriLife Research****Lubbock, TX****A. Ibrahim****Texas A&M AgriLife Research****College Station, TX****E. Barnes****D. Jones****Cotton Incorporated****Raleigh, NC****Abstract**

Cotton leaf grade is a visual estimation of the amount of plant material in a lint sample on a scale of 1 to 7, with 1 being the ideal score (Larson and English, 2001). Plant material in harvest lint is waste, and can result in price dockage for the producer because additional processing is required to remove the plant material. Previously, several factors were believed to negatively influence the leaf grade values, including the level of leaf defoliation and desiccation prior to harvest. However, recent research by Eder, et al., 2013 and Boykin et al., 2013 identified leaf hairiness as being a primary culprit in higher leaf grade values. Additionally, during these trials, discrepancies in seed company ratings for leaf hairiness and quantified trichome densities were observed. Due to these findings, there is widespread support from agronomists, plant breeders, and ginners to obtain an objective and robust method for quantifying an industry-wide standard for leaf hairiness. From existing small plot variety trials in 2013 in Palacios, TX, Lubbock, TX, Keiser, AR, and Tifton, GA, leaf trichome densities were quantified across major cotton production regions. ST 5288B2RF was planted at all locations to serve as a hairy check. A pilose genotype was included at Keiser and Palacios to serve as a second hairy check. Trichome densities were quantified using the methods described by Bourland et al. 2003. Eight varieties were in-common across all locations. These trials did identify a genotype by environment interaction. Normalizing each variety for each location with the ST 5288BRF trichome density and ranking the varieties still did not allow the locations to be combined. Some varieties, such as PHY 339 WRF had very stable trichome densities across locations. However, PHY 499 WRF was highly variable across locations. Discrepancies were observed between company leaf hairiness ratings and the objective trichome density ratings for some varieties. A similar trial will be continued in 2014 with additional hairy checks being included and additional locations.