COTTON VARIETY CHARACTERISTICS AND THEIR IMPACT ON COTTON LEAF GRADE

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Abstract

Defoliation of cotton, (*Gossypium hisrutum* L.) has been referred to as more art than a science by industry leaders. The remnants of leaf material in harvested cotton can significantly increase leaf grade values and result in dockage to the producer. Cotton classed through the USDA-AMS Classing office in Corpus Christi, Texas has reported increases in leaf grade values beginning in 2000. The impacts of the agronomic variables were studied over three growing seasons and data were used to narrow possible contributors to increased leaf grades, including leaf pubescence and harvest-aid treatments. Multiple trials were conducted in five counties in Texas. County variety trials were defoliated with a uniform harvest-aid treatment to identify leaf pubescence differences and the resulting impact on leaf grade for six varieties. Module tests were used to compare DeltaPine 0935 B2RF and 0949 B2RF leaf grades from a commercial gin. Leaf and bract samples were collected and processed to quantify trichome density. Visual quantification of leaf and bract pubescence was conducted on the highest fully-expanded leaf and mid-canopy full sized bolls when cotton was at cut-out. A total of 10 leaf and 10 bract samples were collected and quantified for eight varieties. Results from pubescence quantification indicated variation from company based rating system. All samples were transported and ginned at the Texas A&M University Agrilife Research Center in Lubbock, Texas to mimic a commercial ginning. Leaf grades from harvested lint showed that increased trichomes can potentially increase leaf grade.