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 one 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. Currently, several factors are believed to negatively influence the leaf grade values. First is the level of defoliation and desiccation prior to harvest. Second is the varietal characteristics, such as leaf hairiness, bract hairiness, and leaf and bract size.

The efficacy of chemical defoliation can be an unpredictable process but is vital for the harvest efficiency and to minimize dockage from plant materials (Valco and Snipes, 2001). Factors impacting defoliation vary from harvest-aid selection, plant condition, weather prior to and during application, spray coverage, canopy density, translocation, and varietal traits (Cathay, 1986, Oosterhuis et al. 1991). Additionally, hairier varieties are suspected of contributing to higher leaf grades through a “velcro effect.” The hairiness of commercial cotton varieties are assigned by a subjective rating system (smooth to very-hairy), and inconsistencies exist between varietal ratings available to producers.

DEFOLIATION AND VARIETIES

**RESULTS AND DISCUSSION**

Defoliation Trial: A wide range of defoliation and desiccation levels were obtained with the selected defoliation treatments (Fig. 2). Despite the range of defoliation levels, no differences were observed in leaf grade values (Fig. 2). The 2010 season had leaf grades of 3 and 4, while in 2011 leaf grade values did not rise above 2. Low leaf grades in 2011 were the result of more suitable harvest conditions, compared to 2010.

**CONCLUSIONS**

- Cotton leaf grade was not influenced by the defoliation or desiccation levels
- Leaf hairiness influences leaf grade more than defoliation when environmental conditions are conducive for higher leaf grades
- Differences between years indicate specific environmental conditions, such as rainfall after harvest-aid application, needed for high leaf grade

**FURTHER RESEARCH**

- Evaluate various physiological traits that may influence cotton leaf grades and other fiber quality characteristics
- Develop an industry-wide standard for leaf hairiness

**ACKNOWLEDGEMENTS**

This research was supported by the Texas State Support Committee, Cotton Incorporated, Cotton Foundation, and Texas A&M University.

**REFERENCES CITED**


