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LINT YIELD AND FIBER QUALITY AS INFLUENCED BY ENDOTHALL IN COMBINATION WITH LOW RATE DEFOLIANTS

E.W. Rounds
Texas A&M University and
Biological Research Service, Inc.
College Station, TX
J.T. Cothren and J.B. Bynum
Texas A&M University
College Station, TX
H.R. Smith
Biological Research Service, Inc.
College Station, TX

Abstract

Harvest aid application to cotton (*Gossypium hirsutum*, L.) is an important decision for cotton producers across the cotton growing belt. Producers are constantly searching for new products and tank mixtures to enhance defoliation activity and reduce cost. This experiment was conducted to determine the viability of endothall in combination with Dropp SC, Def 6, and Aim. This field study was conducted at Buffalo Ranch in Burleson County, TX on 'DPL 555 RR/BG' cotton that was planted on 12-April-2003. The defoliants were applied when the cotton was 60% bolls open on 9 and 10-Sept-2003 and rated at 7, 14, 21 days after treatment (DAT) for defoliation, desiccation, percent green leaves, and terminal regrowth. The cotton was harvested and lint samples were sent to the International Textile Center in Lubbock, TX for fiber analysis. Data analysis was conducted on all parameters using SAS PROC GLM and the means were separated using Fisher's Least Significant Difference with $\alpha = 0.05$. The reduced rate of Dropp SC with endothall was comparable to the label rate of Dropp SC at 21 DAT for defoliation and percent green leaves and at 7, 14, and 21 DAT for terminal regrowth. Likewise, the reduced rate of Def 6 with endothall was comparable to the label rate of Def 6 for defoliation and percent green leaves at 7 and 14 DAT, and at 14 DAT for terminal regrowth. The reduced rate of Aim with endothall was equivalent to the label rate of Aim for defoliation, percent green leaves, and terminal regrowth at all reading dates. Antagonism was observed with the reduced rates of Dropp SC with endothall compared to the label rate of Dropp SC at 7 and 14 DAT for defoliation and percent green leaves. The combination of the reduced rate of Def 6 with endothall significantly reduced the harvest aid effectiveness compared to the label rate of Def 6 for defoliation and percent green leaves at 21 DAT and at 7 and 21 DAT for terminal regrowth. A combination of endothall with the reduced rate of Aim was equivalent to the label rate of Aim for the parameters tested. The reduced rates of the harvest aids with endothall were similar to the label rates of the harvest aids for total seed cotton yield, total lint yield, and gin out. Fiber quality traits were comparable for most traits between the label rate of the harvest aids and the reduced rate when combined with endothall. The HVI measurements showed significant differences for reflectance, uniformity, and length, the biological significance of these differences cannot be explained by this experiment. Future research is needed to address these observations before any conclusions can be drawn.