IRRIGATION, PIX (MEPIQUAT CHLORIDE), AND FIBER PROPERTY VARIABILITY IN MISSISSIPPI AND TEXAS COTTON

G. Davidonis and A. Johnson
USDA, ARS
Southern Regional Research Center
New Orleans, LA
K. Hood
Perthshire Farms
Gunnison, MS
J. Landivar
Texas A&M University
Agricultural Research and Extension Center
Corpus Christi, TX

Abstract

Variability in cotton fiber properties can arise pre or postharvest. Preharvest contributors to variability include genotype, environment and cultural practices. The objective of this research was to assess degrees of fiber variability progressing from boll to bale. Fiber samples from Pix-treated-rainfed and irrigated DP51 plants (MS, 1995) and Pix-treated and non-Pix-treated rainfed and irrigated DP50 plants (TX, 1994, 1995) were analyzed using the Zellweger Uster Advanced Fiber Information System (AFIS). Bulk fiber analysis (pre and post ginning) showed that fiber properties were similar for fiber from rainfed and irrigated plants (MS). Differences in fiber properties related to the position of a boll on a branch were not seen in MS-grown cotton. Fiber property trends related to mainstem node number were similar (MS, TX). Irrigated plants (MS, 1995; TX, 1994) had the shortest fiber in early set bolls. Micronafis (micronaire) values for fiber from late set bolls was higher than early set bolls (MS, TX, 1994; TX, 1995 rainfed, 1995 Pix irrigated). Variability of fiber properties as expressed by differences in coefficient of variation values revealed that fiber from some rainfed no-Pix-treated plants was more variable than fiber from rainfed Pix-treated plants. Irrigation reduced some fiber property variability related mainstem node location. Pix treatments may have the potential to reduce some fiber property variability within a boll.

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