THE IMPACT OF PLANTING DATE ON FIBER AND YARN QUALITY

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Abstract

Evaluation of planting dates for enhanced fiber quality may or may not coincide with the optimum yield planting date. Cultivar selection is important in growing regions in which early planting can result in fiber with micronaire values at or above 4.9. The objective was to determine the effect of planting date on fiber and yarn properties of eight cultivars. Cultivars with specific fiber properties were selected: Deltapearl (long fiber), DP555 B/R (elevated short fiber content), FM960 B/R (high strength, small perimeter), PSC355 (high strength), PHY410 R (high strength), DP444 B/R (low micronaire), ST4892 B/R (high micronaire) and ST5599 B/R (mid-range properties but tends to be high micronaire). Cotton was planted in early April, late April, early May and late May in 2004 and 2005 in Winnsboro and St. Joseph, LA. Planting dates in late April and early May were one week apart. Fiber Upper Half Mean Length was shorter for Winnsboro 2005 planting dates for all cultivars except PSC355. Fiber length did not change across planting dates each year and location. Micronaire for ST4892 B/R was at or above 4.9 for all planting dates except late May for both locations and years. Micronaire decreased with lateness of planting. Fiber strength did not decrease with lateness of planting. Deltapearl fiber showed the least variability across planting dates and years for strength. Yarn tenacity did not decrease across planting dates. Across the Winnsboro 2005 planting dates fiber strength was related to yarn tenacity for PHY410 R, ST4892 B/R and ST 5599 B/R. Cultivar fiber property packages impact yarn tenacity. Mean yarn tenacity and fiber perimeter across all years, planting dates and locations was similar for Deltapearl and DP444 B/R. Deltapearl had stronger and longer fiber while DP444 B/R had greater length uniformity, lower fineness and lower micronaire values.