

VARIETY BLENDING IN TENNESSEE — YEAR TWO
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Abstract

In recent years, cotton producers have been heavily discounted for high micronaire and short staple cotton. Until recently, most varieties that offered improved fiber quality were later maturing varieties not suited for the short, Tennessee growing season. In addition to the later maturity, the yield potential of these varieties was often less than desirable. In the absence of suitable varieties, producers in Tennessee have adopted variety blending as means to improve overall fiber quality. The principle for blending varieties suggests blending a high-yielding, early-maturing variety with a variety that provides better fiber quality. Therefore, overall fiber quality could be improved while maintaining high yields and earliness. The adoption of variety blending by several Tennessee producers prompted the initiation of this research in 2002.

Three separate tests were conducted in 2003 at the West Tennessee Experiment Station in Jackson, TN. The first study was a continuation of research initiated in 2002 and included blending three high-yielding, stacked-gene varieties, PM 1218 BR, SG 215 BR and ST 4892 BR with DPL 451 BR, FM 989 BR and DPL 555 BR. In this test, varieties were blended in an alternating row configuration (AR) and in a 50:50 blended seed mixture (50:50). Two new blending studies were initiated in 2003; one evaluating AR blends with the new varieties DPL 444 BG/RR and FM 960 BR and another evaluating blends of PM 1218 BG/RR and DPL 451 BR in various ratios. In all tests, each variety was also planted alone for comparison. With the exception of blending, all studies were managed using Tennessee Extension Service recommendations. Plots were defoliated without a boll opener and spindle picked twice to provide a measure of earliness. Seedcotton was ginned at the West Tennessee Experiment Station on a 20 saw gin equipped with a stick machine, two incline cleaners and two lint cleaners. A sub-sample of lint from each plot was analyzed by HVI procedures at the USDA-AMS Cotton Classing Office in Memphis, TN. Data were analyzed using Proc GLM (SAS v8) and mean separation procedures were conducted using LSMEANS/PDIFF ($p=0.05$).

As in 2002, the effect of blending method (AR or 50:50) on yield or fiber quality was not significant; therefore data from each variety blend were combined across blending method. Lint yields, gin turnouts and earliness of blends were often intermediate between the pure variety and its blend. Blends including the high yielding, high turnout varieties DPL 555 BG/RR and DP 444 BG/RR often resulted in increased yield and gin turnouts over the pure variety. Overall fiber quality, particularly micronaire, was better in 2003; therefore no significant reductions in overall micronaire were seen. However, the micronaire of some blends with PM 1218 BG/RR actually avoided a low mike discount. Most blends of PM 1218 BG/RR, SG 215 BR and ST 4892 BR had significantly greater overall fiber length than when planted alone. Fiber length increased as the percentage of DP 451 BR increased in the blend. Blends containing the varieties FM 989 BR or FM 960BR had significantly greater fiber strength than the variety planted alone. Like 2002, uniformity was unaffected by blending. These data suggest that blending varieties may offer a temporary solution to fiber quality problems but newer varieties like DP 444 BG/RR and FM 960 BR should offer high yields and discount free fiber quality without the caveats of blending.