

**FUNDAMENTALS OF FIBERMAX BREEDING: SUCCESSFULLY COMBINING HIGH YIELD WITH  
PREFERRED FIBER QUALITY****Steve Hague****Bayer Cotton Seed International  
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Bayer CropScience is a global cotton seed company that breeds in local markets and sells cotton seed under the FiberMax® brand. To develop high yielding cotton varieties with high quality fiber, breeding programs encounter three primary obstacles: a narrow germplasm pool of cultivated *Gossypium hirsutum*, a complex genetic system that limits recombination, and intense commercial demand for transgenic traits. To meet these challenges, FiberMax breeders use the broadest available germplasm, as well as sophisticated conventional breeding methodology and biotech tools to break negative linkages among yield, agronomic, and fiber traits. When lint yield is plotted against fiber length, strength, micronaire, and length uniformity; FiberMax transgenic sister-lines demonstrate R-square values near zero. Therefore, FiberMax breeders are not required to compromise yield for fiber quality when developing varieties. Consequently, FiberMax varieties perform very well in trials across the Cotton Belt in terms of yield and fiber quality. In conclusion, USDA cotton-classing information suggests that in markets where FiberMax has a dominant share, fiber quality has improved dramatically from historic values.