

Use of Interspecific Hybrids in the Texas A&M University Cotton Improvement Laboratory

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Integrating alleles from *Gossypium* species into *G. hirsutum* is important for the enhancement of genetic variability and for creating polymorphism useful in molecular mapping studies. Through collaborative efforts, several species including *G. barbadense*, *G. tomentosum*, and *G. mustelinum* have been hybridized with upland genotypes (*G. hirsutum*). Substantial yield drag has been a major obstacle in accessing alleles from interspecific lines, particularly from *G. tomentosum* and *G. mustelinum* breeding lines. Sea island cultigens (*G. barbadense*) have proven the most beneficial sources of fiber quality improvement with the least amount of yield drag. Successful mating schemes included backcrossing and repeated individual plant selections of adapted biotypes. These techniques resulted in several interspecific hybrid lines with superior fiber properties and equivalent yield potential in comparison to the original upland parents.