PROCESSING A NURSERY: EVALUATING THE UTILIZATION POTENTIAL FOR EARLY GENERATION MATERIAL

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Abstract

In 2016, 246 $F_{2:3}$ progeny rows and 5 check varieties were planted in two mirrored nurseries; one being maintained with average levels of irrigation and one being dryland. Boll samples (50 bolls) were harvested from each of the progeny rows and check varieties for fiber quality evaluation. Initial fiber quality was determined using both high volume instrument (HVI) and advanced fiber information systems (AFIS). Fiber samples were processed using the Shirley analyzer as a method to induce additional strain on the fibers (mimicking other mechanical processes like aggressive ginning). After processing, samples were tested again using HVI and AFIS to establish post-processing fiber quality. Fiber quality data will be used to evaluate individual genotypes and comparisons across genotypes for both environmental and processing effects.

The current objective of this study is to develop breeding tools that will aid in the selection of genotypes with fiber quality profiles needed to better resist fiber breakage (maintain length uniformity and minimize short fibers) during mechanical handling and processing. A second objective is to determine if there are differences in the genotypes' ability to maintain this combination of fiber properties across growing environments. Data presented is from year one of an ongoing study.