CROSSING ELITE COTTON CULTIVARS TO IMPROVE FIBER ELONGATION
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Abstract

Improvement in the cotton spinning industry demands Upland Cotton with stronger fibers and better elongation for
high throughput processing. Fiber elongation is an important aspect in determining the overall fiber quality as it
increases the work to break component of fiber strength. Over the years, there has not been significant efforts in
improving fiber elongation of Upland cotton cultivars (*G. hirsutum*) in the United States due to lack of high speed
measurement technology. High Volume Instrument (HVI) technology is the industry standard for measuring fiber
properties worldwide but lacks consistency relative to fiber elongation. Stelometer is the preferred instrument for
elongation measurement as it is highly repeatable and accurate compared to HVI but extremely slow. The objective
of this study is to evaluate the combining ability for elongation among a set of Upland cotton lines using a diallel
design and elongation measurement via the Stelometer.