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.