VARITATION AND APPLICATION OF AFIS FIBER LENGTH DISTRIBUTIONS

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Abstract

Fiber length is one of the primary quality parameters for the cotton industry when considering a cotton's textile performance and end-use quality. Currently all decisions regarding cotton fiber length utilize the industry standard measurement device, i.e. the High Volume Instrument (HVI). However, it is documented that complete fiber length distributions hold more information than the currently reported HVI length parameters, upper half mean length (UHML) and uniformity index (UI). An alternative measurement device, the Advanced Fiber Information System (AFIS), is able to capture additional information about fiber length distribution. What is currently not known is how much additional information the AFIS length distribution holds. The objective of this research is to investigate the types of variation captured with the complete AFIS fiber length distribution on a diverse breeding population. Then the practical application of characterizing this germplasm using the complete distribution was compared with using two standard length parameters. Our finding suggests there are four significant sources of length variation captured in the complete fiber length distribution and that using two standard parameters fails to characterize cotton germplasm as well as this complete distribution.