SOURCES OF VARIABILITY OF COTTON FIBER LENGTH DISTRIBUTION

Mourad Krifa
International Textile Center - Texas Tech University
Lubbock, TX

Abstract

Observed fiber length distributions are affected by a combination of intrinsic (genetic and environmental) and processing factors which result in complex patterns and prevent effective use of length distribution in improving cotton varieties and optimizing growth practices and processing conditions. Our research has shown we can adequately parameterize the complex distribution patterns of cotton fibers and that useful inferences could be made about the intrinsic and process-related factors determining its shape. With this newly-developed model, these interactions may be separated and quantified at any point in the process (Krifa, 2004, 2006a, b, 2007). This will generate new knowledge about impacts of genetic, environmental and agronomic factors on fiber length distribution which may be used by those involved in the production and marketing chain (breeders, farmers, ginners, and textile manufacturers) to improve and preserve the genetic length distribution.

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