

**PROCEDURE TO CORRECT THE HIGH VOLUME INSTRUMENT FIBROGRAM****Addisu Ferede Tesema****Md Abu Sayeed****Christopher Turner****Eric Hequet****Texas Tech University, Department of Plant & Soil Science****Lubbock, TX****Brendan Kelly****Texas Tech University, Department of Plant & Soil Science and Texas A&M AgriLife Research****Lubbock, TX****Abstract**

The High Volume Instrument (HVI) is used to assess important properties of cotton fibers. Fiber length is a crucial parameter among measured properties throughout many textile processing steps. The HVI currently reports two length parameters, Upper Half Mean Length (UHML) and Uniformity Index (UI), where UI is the ratio of Mean Length (ML) to the UHML expressed as a percentage. Both parameters are extracted from a fibrogram, and they are used in the current U.S. cotton classification and global cotton marketing systems. But, the ML and UHML are highly correlated and only characterize the longer fibers in a sample. Fibrogram contains more descriptive information than the two HVI length parameters. For a given HVI, the entire fibrogram is stable over short-term and longterm periods, but differences were observed among HVIs. Therefore, our goal is to establish a correction procedure to bring HVI fibrogram measurements of several instruments to similar levels. For this purpose, two USDA length calibration cotton standards were used to acquire reference values. The two samples were tested with 100 replications each on two "reference" HVIs to obtain a reference fibrogram. These samples were also tested on four other HVIs with 12 replications each to obtain the observed values of the fibrogram independently on each HVI line. Reference and observed values were used to obtain correction factors for a series of span lengths. Then, a set of 13 USDA evaluation samples that cover a wide range of fiber length parameters was selected and tested with 10 replication on the same four HVI lines. The span length values were corrected using the determined equations. The results obtained showed that the fibrograms among HVIs are more similar after correction.