WITHIN SAMPLE VARIABILITY OF FIBER QUALITY MEASUREMENTS D. R. Paudel E. F. Hequet Fiber and Biopolymer Research Institute, Department of Plant and Soil Science, Texas Tech University Texas AgriLife Research Lubbock, Texas B. Kelly R. Manandhar F. Hosseinali Texas Tech University Lubbock, Texas

<u>Abstract</u>

The high variability of fiber quality parameters within a sample of cotton leads to difficulty for a rapid and accurate measurement of these parameters. Higher variability requires a larger number of samples to be tested per sample. Commercial bales, breeder samples, and processed cottons such as card web have different levels of variability within sample for different measurements. Knowledge about the adequate sample size required for accurate measurement of various parameters is imperative. A study has been initiated to measure the within sample variability of different cotton quality measurements for different sample types. The adequate number of replications required for accurate measurement has been determined. The results from the output of the AFIS PRO2 show that card web has lower variability within sample thus having higher repeatability as compared to the commercial and breeder samples. This justifies the need for a larger number of replications per sample to be tested for breeder samples and commercial samples as compared to card web. This paper explores the number of replications required for different quality parameters under different scenarios.