STELOMETER AND HIGH VOLUME INSTRUMENT STRENGTH MEASUREMENTS OF DIFFERENT UPLAND COTTON FIBERS

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Abstract

This study analyzed Stelometer and high volume instrument (HVI) strength on 5 Upland cotton fibers, together with attenuated total reflection Fourier transform infrared spectroscopy characterization of resultant Stelometer breakages. Stelometer tenacity agreed with HVI strength in general, but one Upland variety (immature) was observed to show the lowest HVI strength value while another Upland variety (larger infrared crystallinity index) to show the smallest Stelometer tenacity. Meanwhile, there were apparent distinctions in regressions and statistics of examined correlations between each Upland fibers, addressing the challenge of understanding the unique response between fiber physical and structure properties from different measurements even within one cotton variety.