EFFECT OF FIBER MATURITY ON FIBER LENGTH DISTRIBUTION AND YARN EVENNESS PROPERTIES Roji Manandhar Eric Hequet Noureddine Abidi Brendan Kelly Fiber and Biopolymer Research Institute - Dept. Plant & Soil Science, Texas Tech University Lubbock, TX Randy K. Boman Oklahoma State University Southwest REC Altus, OK J. Wanjura USDA-ARS Lubbock, TX

Abstract

Sixty four commercial bales of cotton were harvested from eight different locations of West Texas from 2008 through 2010. For each location, 4 bales were harvested with a picker harvester and 4 bales with a stripper harvester. Picker harvested cottons were ginned with a picker sequence while stripper harvested cottons were ginned with a stripper sequence. 2008 and 2009 cottons were less mature compared to 2010 cottons. Each bale produced was sampled and the lint was tested on both HVI and AFIS. Then, the lint was processed through our short staple spinning facility to produce carded and combed ring spun yarn (30Ne). The yarns produced were tested on Statimat DS and UT5. The results obtained show that most of the fibers removed during processing (opening, carding, combing) were short and very immature. Therefore, the common hypothesis of independence between fiber length and fiber maturity within-sample needs to be revisited. In most of the cases, HVI testing did not allow us to discriminate between the two harvesting methods while the AFIS did. AFIS provides crucial information that can supplement HVI data and could allow us to better predict yarn quality.