EVALUATION OF TEXAS COTTONS FOR FINE-COUNT PLIED YARNS M. Dean Ethridge, Ph.D. Fiber and Biopolymer Research Institute Lubbock, Texas

Abstract

Over the past decade, much cotton grown on the Texas Plains has become long, strong and fine enough to gain access to markets using combed cotton in making medium- and fine-count, ring-spun yarns. Fine-count plied yarns are among the most valuable in the market and the best Texas Plains cottons have properties that appear to be adequate for this use. This project evaluated the performance of selected Texas cottons with HVI properties that satisfied the thresholds for making fine-count yarns. The premium niche of 80/2 Ne (80-English-count, 2-ply) yarns was targeted. Given that plied yarns are known to exhibit substantially improved evenness properties and are much more durable in down-stream processing versus single yarns, adequate spinning performance by Texas cottons could further expand market access. Following proof-of-concept spinning on the new IMDS LabSpinner, selected cottons were spun under high-speed, industrial running conditions, using both conventional and compact ring spinning technologies. In addition to the spinning treatments, cottons selected also allowed a comparison of differences in harvest treatments; i.e., picker versus stripper harvesting. In all cases, the 80/2 Ne yarns were compared with 40/1 Ne yarns made with the same cottons. Early results for both spinning performance and yarn quality indicate good potential for these Texas cottons. Further evaluations are needed to verify and expand the conclusions.