SPINNING PERFORMANCES OF WEST TEXAS UPLAND COTTON

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Abstract

The shrinking U.S. textile manufacturing industry dictates an increased reliance on the international market for selling U.S. cotton. As example, approximately three-fourth of the 2008 U.S. cotton crop will be exported. This process, in turn, is transforming the requirements on fiber properties. The U.S. industry has long been focused on the production of medium and coarse yarns and has long emphasized open-end rotor spinning, rather than ring spinning. However, the focus of the dominant international textile industries is on the finer yarns and on ring spinning. Thus, global textile mills interested in sourcing cotton from the global market emphasize those cotton growths with fiber profiles adapted to this market (fiber that are long, uniform, mature, fine, strong, and with low contamination levels, such as neps, bark, and seed coat fragments). Therefore, our goal is to evaluate the spinning potential of commercial bales from West Texas.

We selected twelve bales from the 2007-08 crop year. For each bale a complete fiber quality profile was done (HVI, AFIS). Then, combed ring spun yarns (Suessen Elite 1000) were produced: 20, 24, 16, 30, and 36Ne with 3 combing noils levels (15, 20, and 25%).

The results obtained demonstrated that:

- The original output of the AFIS is the length distribution by number. The length distribution by weight is calculated from the length distribution by number assuming a constant average fineness among length groups. Our results clearly demonstrate that this assumption should be revised.
- With the type of cottons selected, we have been able to produce yarns that could compete on the international markets if the combing noils percentage is comprised between 20 and 25%, and if the yarn count is 24Ne or coarser.

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