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EFFECTS OF DRAWING AFTER COMBING (PART 2)

In last month's issue of *Textile Topics* (Volume XX, No. 1), we began a report on the influence of drawing after combing. We pointed out that we were using cotton produced in California and of quality that would normally be combed for superior yarns and fabrics. The cotton was divided into three groups, all of which were ultimately spun into an N_e 50 yarn. The first lot was not combed but was carded and drawn two times prior to roving and spinning. The second lot was combed and then drawn only one time, while the third was combed and drawn twice. All three lots were processed into roving prior to ring spinning.

We gave two charts showing a comparison of the strength (CSP) and non-uniformity of the three yarns. These graphs demonstrated that the two combed yarns had greater strength than the one produced by carding and drawing only. It was interesting that the strengths of the combed yarns were nearly the same, and in a few cases the yarn produced from single drawing was stronger than that from two drawings.

The chart demonstrating non-uniformity showed quite clearly that the two combed yarns had significantly less variation than the carded yarn. The evenness of these two yarns was about the same, although that from two drawings had a slightly lower CV% in every case.

This month we continue the report with emphasis on factors contributing to evenness. We are giving three charts showing measurements that lead to non-uniformity. The first graph (at right) presents thin places/1000 yds of yarn, the second gives thick places, and the third shows neps/1000 yds. It can be seen that the carded yarn had greater non-uniformity and a higher number of neps. Combing obviously enhanced the quality of the material, whether one or two drawings were used afterward.

It is generally understood that a more even yarn will have higher strength, and a greater number of thick and thin places will contribute to lower strength. This was confirmed in the data from this study which gave a correlation of – 0.81 between evenness and single-strand strength. While it is easy to see that the non-uniformity of the carded yarn was higher and the strength lower than that of the combed yarns, it is interesting to note there was little difference in the quality of the combed yarns produced by one and two drawings. We intend to study this further.

We plan to repeat this study with new machinery and produce yarns on a rotor machine rather than a ring frame. We are currently installing a Rieter E7/6 Comber, an E5/3 Unilap Lapper and a new RSB 851 Drawframe. While the primary objective of the future research will be to evaluate combing for rotor spinning, a secondary objective (continued on page 2)

Figure 3: Bar Chart for Thin Places/1,000 Yds.

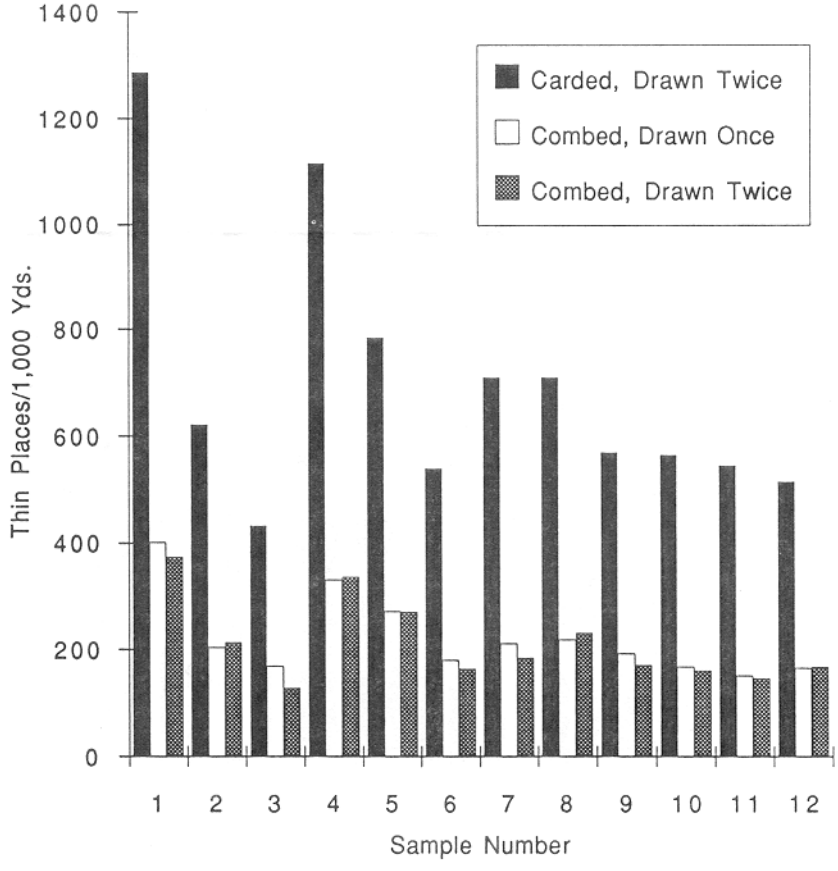
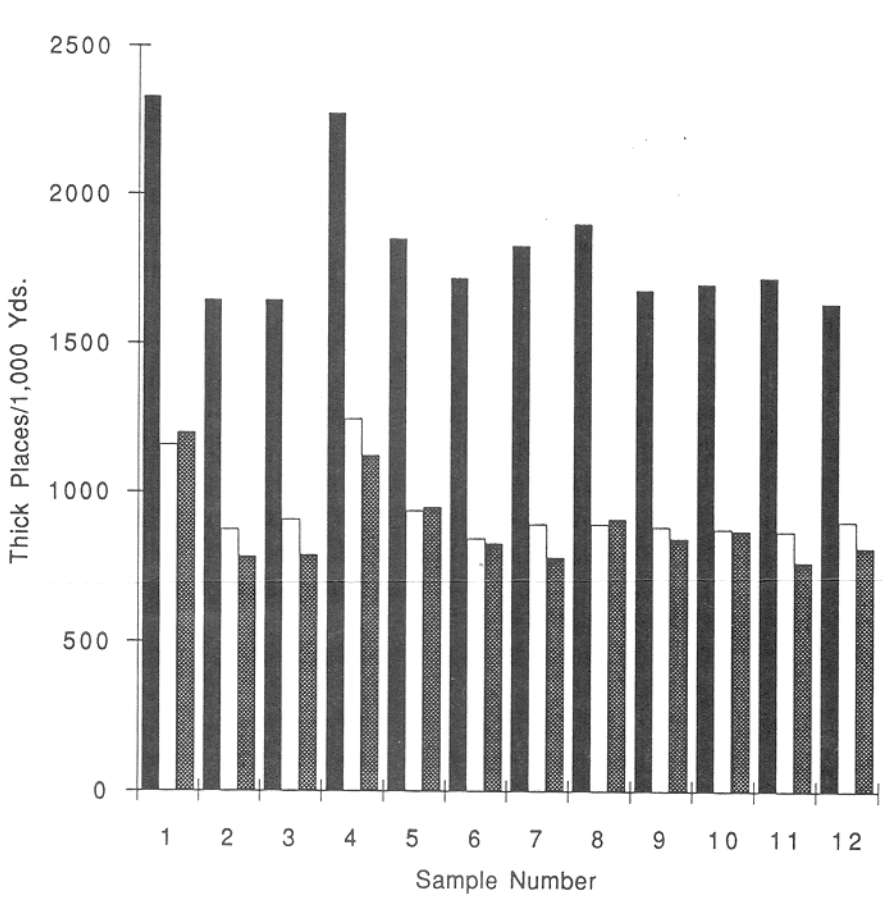


Figure 4: Bar Chart for Thick Places/1,000 Yds.



(Legend above applies to both Figure 4 and Figure 5)

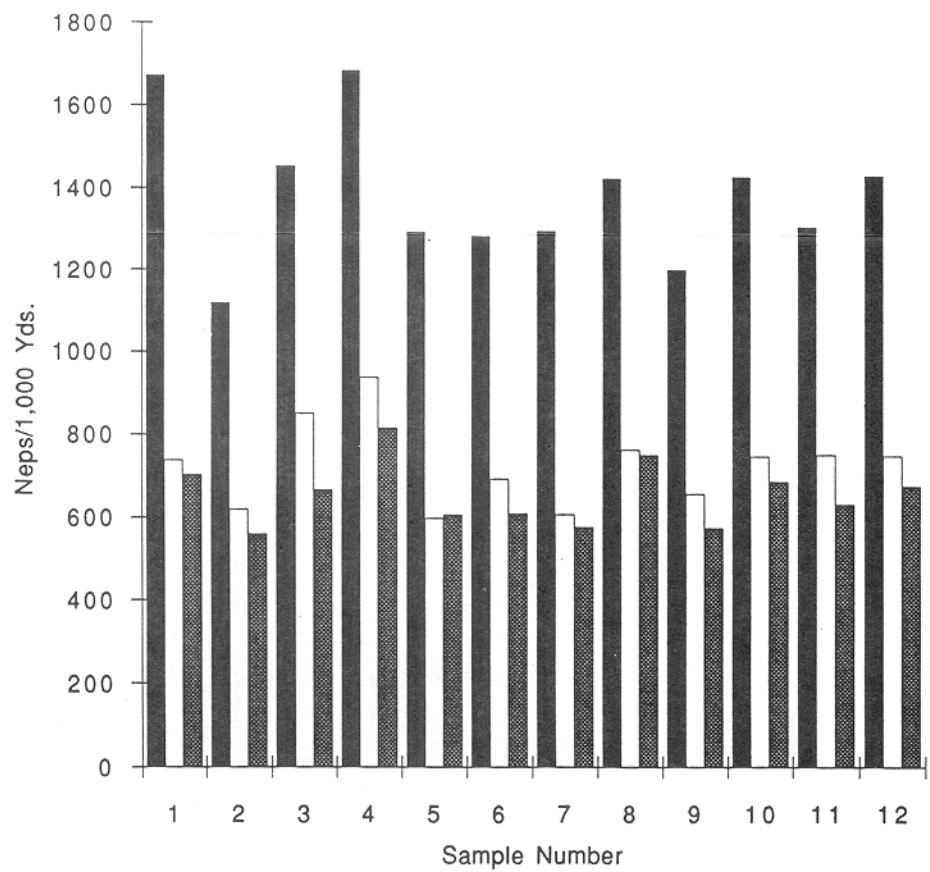
(continued from page 1)

will be to determine whether the new equipment can produce sliver with one drawing passage that will give yarn of equal or better quality than that coming from two drawings. We understand the RSB 851 Drawframe is claimed to be capable of producing high quality sliver at one drawing that will give top quality yarns. We can see from the results of the program we are reporting here that an improvement in drawing very likely could give yarns coming from a single passage that would be equal in quality to those produced after two drawings. We anticipate this to be an interesting study and we look forward to starting it as soon as possible.

As mentioned last month, this program was sponsored by the Texas Food and Fibers Commission. The research has been supervised by John B. Price, ICTRD assistant director, and William D. Cole, head of spinning technologies. Assistance was given by Felix Torres, Danny Rodriguez and Ramon Ortiz.

We will continue this report in the November issue of *Textile Topics*.

Figure 5: Bar Chart for Neps/1,000 Yds.



TEXAS INTERNATIONAL COTTON SCHOOL

The fifth class of the Texas International Cotton School was conducted from October 7 through October 25. Fifteen participants studied at the International Center and at various marketing firms in Lubbock during the three-week period.

This school is sponsored by the Lubbock Cotton Exchange and two classes are held each year, one in the fall and the other during the spring. The next class is scheduled to begin April 6, 1991.

The curriculum covered planting, growth, cultivation and harvesting of cotton, followed by a study of ginning practices. The textile technology part of the studies, offered each morning, began with HVI fiber testing and continued through carding, spinning and fabric formation. Emphasis was placed on relating fiber properties measured by HVI instruments to spinning performance and yarn quality. Marketing classes were given in the afternoons.

TICS V students are pictured at left with Russell Ellison and Mandy Howell of the Lubbock Cotton Exchange (second and fifth from right, back row)

Students attending Class V were:
from Argentina: Carlos M. Basaldua, Alpargatas S.A.I.C., Buenos Aires;
from Australia: Philip D. Ryan, Dookie College, Victoria;
from Bulgaria: Neli T. Garkova, Bulgaria Cotton Spinning Mill, Sofia; and Ventzislav M. Zashev, Maritza Textile Co., Plovdiv Sity;
from France: Jean Yves Le Bourge, Compagnie Francaise Pour le Developement des Fibres Textiles, Paris;
from Italy: Fabrizio Bonadei, Filati Filartex, Firenze;
from Mexico: Alfonso Rivero, Alfonso Rivero Carvallo Z y Co., Puebla;
from Nigeria: V.P. Chanrai, Afcott Nigeria Ltd., Lagos; and Bhagwan Mahtani, Churchgate Group, Lagos;
from Yugoslavia: Dijana Krstic, Yucan Trade International, Skopje;
from the United States: Leanne Wilson Price, Russell Corp., Alexander City, AL; Buxton S. Midyette, Cotton Council International, Washington, DC; Rob Caldwell, Amcot, Atlanta, GA; James M. Bragdon, Fieldcrest Cannon, Inc., Salisbury, NC; and W. Ray Wyatt, Amcot, Greenville, SC.

Instructors for the textile technology portion of the school were Dr. Kater Hake, National Cotton Council, Memphis, TN; Dr. John Gannaway, Texas A&M Agricultural Research Service, Lubbock; Roy Baker, USDA ginning research laboratory, Lubbock; and Harvin Smith, John B. Price, Edwin R. Foster, Bobby G. Wyatt, Richard Combs and R.D. Mehta, all of the International Center.

Visiting lecturers for some of the marketing classes were Joseph J. O'Neill, New York Cotton Exchange, New York, NY; Tom Bell, Conti-Cotton, Washington, DC; and Keith Henley, Cotton Outlook, Memphis, TN.

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As mentioned, the sixth class of the Texas International Cotton School will begin on April 6, 1991. Information can be obtained by contacting the **Lubbock Cotton Exchange, 1517 Texas Ave., Lubbock, Texas 79401. The telephone number is (806)763-4646 and Fax number is 806-763-8647.**

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VISITORS

October was an exceptionally busy month for us at ICTRD, with many individuals and several large groups coming to visit and observe our activities. Among the visitors were Mr. & Mrs. Eric P. Gauch, Peyer Corporation, Dallas, TX; Joe Yankey, Zellweger Uster, Knoxville, TN; Karl-Josef Brockmanns, W. Schlafhorst & Co., Monchengladbach, Germany; B. Everette Scarboro, Jr. and Heinzbert Reiners, Schlafhorst Inc., Charlotte, NC; Sally Fox, Natural Cotton Colors Inc., Wasco, CA; Cary Wolinsky, National Geographic, Norwell, MA; Jon Thompson, National Geographic, London, UK; Riccardo Zanardi, Manifattura di Legnano, Legnano, Italy; Lawrie Williams, Tongaat Cotton, Rivonia, South Africa; and Percy Q. Macaskill, Tongaat Cotton, Warmbaths, South Africa.

Also visiting were Heinz Klotzer, Hans-Peter Triebe and Andreas Schubert, Chemnitzer Baumwollhandels GmbH, Chemnitz, Germany; Korinna V. Kempski-Behrendt and Thomas Behrendt, Munich, Germany; Prescott W. Stone, The Halcyon Group, San Francisco, CA; Virachai Rachayon, South East Cotton Co., Ltd., Samuthprakarn, Thailand; Frederick Shofner and Youe T. Chu, Zellweger Uster, Knoxville, TN; Devron Thibodeaux, USDA, New Orleans, LA; M. Watson, Cotton Incorporated, Raleigh, NC; Maynard Wilson, WestPoint Pepperell,Valley, AL; and B. N. Hoschke, CSIRO Division of Wool Technology, Ryde, NSW, Australia.

On October 15, twenty-eight textile executives from fourteen countries visited the Center as part of the itinerary of the 1991 Cotton USA Orientation Tour sponsored by Cotton Council International and the United States Department of Agriculture. The group was accompanied by Lisa Twedt, Brian Goggins and Kevin Sage-El, USDA, Washington, DC; Geoffrey Audas and Bobbie Raiford, CCI, London, UK; Yoon-Keun Park, CCI, Seoul, Korea; and Vaughn Jordan, CCI, Washington, DC.

Then on October 17, Anshan City's Senior Executives Delegation to the United States, made up of 32 city and business executives from Anshan City, People's Republic of China, came to observe our facility.

Other visitors included six members of a Rotary International Exchange group from Korea; 50 members of the Texas Vegetable Association; 16 plant science students from Howard College, Big Spring, TX; eight students from Eastern New Mexico University, Portales, NM; eight employees of the Lynn County ASCS office in Tahoka, TX; and 14 members of the American Bankruptcy Institute, who were in Lubbock for their area convention.