



QUALITY OF COTTON GROWN IN DIFFERENT AREAS

In last month's issue of *Textile Topics* (Vol. XVII, No. 1, Sept. 1988), we mentioned that we had conducted a study of the quality of a given variety of cotton that had been planted in two widely different locations. The study involved a variety known as DPL 50 which was planted in the Corpus Christi area of Texas and in Arizona. We were told that while the resulting lint was the same, there may have been a price differential of several cents per pound. We have not investigated any price difference nor determined the extent of what this might have been, but we thought it would be interesting to learn whether there was any difference in the quality of the cotton produced in the two areas.

With the cooperation of the South Texas Cotton and Grain Association, we were able to obtain one bale of DPL 50 from each location. We learned that both bales had been harvested by spindle pickers and both were ginned at commercial saw ginning operations. Also, we were told that the Arizona cotton had been irrigated while the Corpus Christi cotton relied on whatever rain fell during the growing season. We were not able to determine the degree of fertilizer application at either location, and we know nothing about the soil type or nutrition. These factors could affect various quality characteristics.

When the two bales were evaluated at the International Center, they were processed in exactly the same manner, using the same machines, speeds and settings. Processing included our standard opening line, a revolving-flat card, and two processes of drawing. Both rotor and ring yarns were produced from each cotton. Part of the finisher drawing sliver was processed through a rove-matic machine to prepare roving for ring spinning. The remaining sliver was taken directly to a Schlafhorst Autocoro rotor machine.

The following two pages give the fiber and yarn testing results of the cottons. It will be seen that the fiber was tested on individual instruments such as the Stelometer and Fibrograph, and also on the

Motion Control HVI system. After spinning, all yarns were tested for strength, evenness, and hairiness. Four yarns were produced at rotor spinning, and two of the same numbers were spun on the ring machine. The 26/1 N_e yarn at rotor spinning was produced at two different twist levels. This was done in preparation for weaving and knitting.

Minor differences in fiber test results and yarn quality can be detected. The cotton produced in Arizona was found to be slightly longer than that grown in Texas. Also, there was a suggestion that it was a bit stronger, although the HVI data show the strength in grams per tex to be the same for both. Whatever the case, any differences in strength did not seem to be transmitted to the yarn. If anything, the yarns from the Texas cotton may have been slightly stronger than those produced from the fiber coming from Arizona. However, the differences here are minor and very likely are without much real value.

We would like to emphasize that while we found the DPL 50 cotton from both locations to be of good quality and entirely satisfactory for processing into the yarns spun in this study, **this report is not an attempt to promote this variety.** We are pleased that we have had an opportunity to examine these two cottons and the yarns produced from them. We have concluded that if there actually was any difference in the price, it is difficult to understand the reason for it. The results of our research show the cottons from the two areas to be quite similar in quality and spinning performance. We hope the information presented here will be of interest to our readers.

We want to express our appreciation to the South Texas Cotton and Grain Association and to the Delta & Pine Land Company for their cooperation and support in this research.

****SEE BACK PAGE FOR TEXCELLANA NEWS****

TABLE 1 LOT NUMBER 2035 VARIETY DPL 50 PRODUCTION AREA Arizona

FIBER PROPERTIES

Individual Instrument Data			HVI Data: MCI 3000		
Stelometer Strength	24.23	g/tex	1/8" Gge Strength	25	g/tex
Elongation	6.08	%	Elongation	6.8	%
2.5% Span Length	1.10	in.	Length	1.12	in.
Uniformity Ratio	45.5	%	Uniformity Ratio	81	%
Short Fiber Content	2.43	%	Micronaire Value	4.6	
Micronaire Value	4.5		Reflectance	80	
Pressley Strength	90.31	Mpsi	Yellowness	7.8	
Shirley Non-lint Cont.	---	%	Index of-Color	- 21	-Leaf 2

IIC/Shirley F/MT	Micronaire: 4.55	Fineness: 198 mtex	Percent Mature Fibers: 78.4
Peyer Texlab AL-101	Upper Quartile Len.: 1.07	Mean Len.: 0.82	CV% of Mean: 39.9 % Short Fibers: 20.6

YARN PROPERTIES

Spinning Machine	Schlafhorst Autocoro				Saco-Lowell SF-3H Ring	
Nominal Yarn Number (N_e)	10/1	18/1	26/1	26/1	18/1	26/1
Nominal Twist Multiplier (α_e)	4.78	4.79	4.00	4.80	3.80	3.80
Skein Test:						
Yarn Number (N_e)	10.02	18.00	25.23	25.46	17.98	25.72
CV% of Yarn Number	0.8	1.0	1.1	0.7	0.9	1.2
Count-Strength-Product	2322	2000	1679	1810	2199	1955
CV% of CSP	1.6	2.4	2.5	3.4	2.2	3.0
Single-Yarn Strength Test:						
Tenacity (g/tex)	13.92	13.03	10.82	11.95	14.18	12.73
Mean Strength (g)	820	427	253	277	465	292
CV% of Break	7.8	8.5	9.1	9.4	10.8	14.3
Elongation (%)	6.35	5.76	5.02	5.44	5.71	5.07
CV% of Elongation	6.4	7.3	9.0	7.9	7.8	9.6
Spec. Work of Rupture (g/tex)	0.503	0.418	0.300	0.356	0.419	0.340
CV% of Work of Rupture	13.5	13.7	15.1	15.8	16.2	21.8
Initial Modulus (g/tex)	303	276	211	229	229	219
Uster Evenness Test:						
Non-Uniformity (CV%)	12.30	14.00	15.61	15.25	20.67	22.84
Thin Places/1,000 yds	1	8	40	35	236	570
Thick Places/1,000 yds	16	39	93	81	962	1457
Neps/1,000 yds	14	46	124	124	171	331
Hair Count/100 yds	630	350	234	218	1581	4207

FIBER PROPERTIES

Individual Instrument Data			HVI Data: MCI 3000		
Stelometer Strength	23.80	g/tex	1/8" Gge Strength	25	g/tex
Elongation	7.17	%	Elongation	8.2	%
2.5% Span Length	1.09	in.	Length	1.07	in.
Uniformity Ratio	48.1	%	Uniformity Ratio	81	%
Short Fiber Content	0.7	%	Micronaire Value	4.8	
Micronaire Value	4.6		Reflectance	78	
Pressley Strength	81.3	Mpsi	Yellowness	7.2	
Shirley Non-lint Cont.	---	%	Index of-Color	- 31	-Leaf 2

IIC/Shirley F/MT	Micronaire: 4.6	Fineness: 214 mtex	Percent Mature Fibers: 73.4
Peyer Texlab AL-101	Upper Quartile Len.: 1.01	Mean Len.: 0.78	CV% of Mean: 39.1 % Short Fibers: 22.1

YARN PROPERTIES

Spinning Machine	Schlafhorst Autocoro				Saco-Lowell SF-3H Ring	
Nominal Yarn Number (N_e)	10/1	18/1	26/1	26/1	18/1	26/1
Nominal Twist Multiplier (α_e)	4.78	4.79	4.00	4.80	3.80	3.80
Skein Test:						
Yarn Number (N_e)	10.05	18.05	26.09	25.89	18.19	25.72
CV% of Yarn Number	0.4	0.9	1.6	1.6	1.0	1.2
Count-Strength-Product	2316	2028	1703	1820	2235	2040
CV% of CSP	2.1	3.1	2.4	2.5	1.9	2.3
Single-Yarn Strength Test:						
Tenacity (g/tex)	13.92	12.69	10.96	11.92	14.30	13.42
Mean Strength (g)	818	415	248	272	464	308
CV% of Break	6.6	8.1	10.2	9.0	10.4	10.8
Elongation (%)	7.37	6.47	5.67	6.09	6.85	6.10
CV% of Elongation	6.3	8.6	9.1	9.9	6.9	8.8
Spec. Work of Rupture (g/tex)	0.589	0.465	0.354	0.404	0.510	0.431
CV% of Work of Rupture	11.9	14.5	17.5	16.4	16.1	17.3
Initial Modulus (g/tex)	301	246	211	231	187	257
Uster Evenness Test:						
Non-Uniformity (CV%)	12.50	14.43	15.27	15.77	18.44	21.08
Thin Places/1,000 yds	0	12	44	46	105	396
Thick Places/1,000 yds	19	52	86	114	459	954
Neps/1,000 yds	17	70	85	121	101	181
Hair Count/100 yds	605	331	291	187	1548	1454

WILLARD SCOTT PROMOTES TEXCELLANA

NBC-TV's Willard Scott came to Lubbock on October 11 for the weather segments he presents on the "Today" show. And while he was giving the weather, he coincidentally gave a strong promotion for TEXCELLANA, the cotton/wool blend developed at the International Center.

When plans for his Lubbock visit were announced, it was decided to present him with several items typical of the area. One suggestion, which turned out to be a tremendous idea, was a sport coat made from TEXCELLANA denim. In response to this gift, Scott made several references to the jacket, stating how comfortable it was and how much he liked its appearance. This promotion brought responses from many locations. Telephone calls were received from such diverse locations as Hawaii, California, New York, and numerous places in the southwestern United States.

We found it interesting that two retail stores called to ask for exclusive rights to sell the TEXCELLANA fabric. Probably the most surprising inquiry was from a garment manufacturing company that thought we were producing the fabric on a commercial basis. They wanted to know how much was available, and stated they would like to have 40,000 yards immediately. At the time we had only about twelve yards left after having Scott's size 52-long jacket made.

We think it is unfortunate that TEXCELLANA has such wide appeal when there is no supply. It does appear, however, that some textile companies may be interested in producing it in the future. We know the blend makes an exceptional fabric for both men's and ladies' sportswear, and we hope it soon will be produced commercially.

Anyone not familiar with the TEXCELLANA

development can find background information in the September 1987 and February 1988 issues of *Textile Topics* (Volume XVI, Nos. 1 and 6).

VISITORS

On October 13, twenty-two members of the French Spinners Association visited the International Center. They were accompanied by Peter Scott, Cotton Council International, London, England. We were pleased to have them with us.

Then, on October 18, participants in the Cotton Orientation Tour sponsored by the National Cotton Council, Cotton Council International and the U. S. Department of Agriculture came to the Center. This year marked the Twentieth Anniversary of the Tour. The group included textile executives from Bangladesh, Belgium, Indonesia, Italy, Japan, Korea, the Philippines, Malaysia, Portugal, Switzerland, Taiwan, Thailand, England and West Germany. For several who had participated in the past, this was their second or even third time to visit us, but the first at our present location. They were accompanied by Steve Beasley and Paul Patterson, USDA, Washington, DC; Jarral Neeper, NCC, Memphis, TN; Vaughn Jordan, CCI, Washington, DC; Peter Scott, CCI, London, England; and Frank Waddle, CCI, Hong Kong.

Also visiting were Felix A. Schilling, Stoneville Pedigreed Seed Co., Stoneville, MS; Allan Heap and Jill Stevens, International Institute for Cotton, Manchester, England; Pierro Razzini, Cotonificio Olcese Veneziano, S.P.A., Milan, Italy; Heinz Poschmanns, W. Schlafhorst & Co., Monchengladbach, West Germany; Alan G. Sutton, Kirstol Ltd., Cheshire, England; and Keith R. Garbett, Dorma, Manchester, England.