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MINI-CONFERENCE SCHEDULED ON HVI COTTON EVALUATION A short conference on the use of high volume instruments (HVI) for determining cotton fiber properties has been scheduled in Lubbock on the afternoon of March 7, 1983. This will present the latest information on recent developments in cotton evaluation by electronic equipment and will be similar to the two-day symposium that was held here in January 1982. The conference, co-sponsored by the United States Department of Agriculture's Marketing Service and the Textile Research Center of Texas Tech University, will be held at the Lubbock Civic Center beginning at 2:00 p.m. and concluding at approximately 5:00 p.m.

The program will include a report by Mr. Jesse Moore, director of USDA-AMS Cotton Division, giving information on the work of the Advisory Committee on Instrument Standards. Other presentations will discuss the marketing of cotton using results from HVI testing, the value of HVI data in spinning and weaving, and the purchasing of cotton by textile companies on the basis of HVI classification. Speakers in addition to Mr. Moore are Herman Riddle, Howard Cotton Company, Germantown, Tennessee; Bob Hale, American Cotton Growers Textile Division, Littlefield, Texas; Murray Williams, Altus, Oklahoma producer; Dan Davis, Commodity Exchange Services, Lubbock, Texas; John Martin, Burlington Industries, Greensboro, North Carolina; and Chessley B. Howard, The Graniteville Company, Augusta, Georgia. Additional information about the conference will be released within the next two weeks.

EFFECT OF COTTON FIBER STRENGTH ON YARN STRENGTH The logical assumption that a strong textile fiber will give a strong yarn and a weaker fiber will give a weaker yarn has been observed for many years, and to restate this is nothing new to textile manufacturers. With the increasing use of high volume instruments for measuring cotton physical properties, however, this phenomenon can be observed more easily than ever before.

In the research conducted by the Textile Research Center during the past year, we have had an opportunity to study the effects of cotton fiber strength on spinning performance and yarn quality. To illustrate this, we have selected two cottons with very nearly the same properties except for strength and elongation. Both cottons were thoroughly tested on our Motion Control HVI 3000 System and then spun in the same manner on the same machines. This has given us an excellent comparison and has shown the effects of fiber strength when other properties are virtually the same, although such well-defined results may not be evident in every case. Tables I and II give the fiber and yarn properties for cotton A, while Tables III and IV give the same information for cotton B. Examination of these data will reveal some interesting aspects of fiber strength.

It can be seen that for different yarn numbers on different types of spinning machines, the stronger fiber gave a stronger yarn in every case. This is shown in the count-strength-product (break factor) and in the single-yarn tenacity. This information should be of particular interest to those manufacturers who need strong yarns for certain end products, but possibly have not had an opportunity to look closely at fiber strength. Fiber strength (1/8" gauge) and yarn strength correlate so well (see *Textile Topics* Vol. IX, No. 4, December 1980) that several organizations have developed formulae for projecting yarn strength from the results of fiber testing.

In reviewing this information, it is also interesting to note the relationship between strength and elongation. This has been observed in testing conducted at the Textile Research Center for more than 20 years. It has been found that, in general, weak cottons have high elongation and strong cottons have low elongation. These properties are transmitted to the resulting yarns. We believe our readers may find

this interesting even though they, too, may have been observing this for many years.

This research was sponsored by the Natural Fibers & Food Protein Commission of Texas. The results we are presenting here have already been reported to NFFPC in the report on research done for that organization in 1982. The program was supervised by John B. Price, head of TRC's open-end spinning research, and Mrs. Reva Whitt, head of our material evaluation section.

COTTON FIBER TESTING REACHES PEAK Each year at this time the cotton fiber testing program at the Textile Research Center reaches a peak of activity before gradually declining during the spring months. Cotton harvesting in this area begins about the first of October and runs through December. However, due to snow and ice in the latter part of December 1982, harvesting and ginning have been delayed. Another factor influencing the amount of testing done at TRC is simply the volume of cotton produced. Severe thunderstorms, too much rain and heavy hail destroyed approximately two-thirds of the West Texas High Plains crop during June and July of 1982. As a result, the total production for this area will be approximately 1.1 million bales versus 3.2 million bales last year. With a decrease in production, all activities related to cotton have also decreased.

In spite of these circumstances, however, the Center has been conducting a large number of cotton fiber evaluations. Presently, slightly more than 27,000 samples have been received at the Center with some 2,000 more waiting to be tested. At the same time last year we had received almost 40,000 samples. When considering the extent of this program, it should be noted that each sample receives 15 individual tests, which means that this year's program will likely be concluded with some 400,000 to 450,000 single determinations. Although the volume of this particular work has been reduced this year, we are finding it still requires many hours of work by our specially trained technicians. We feel that most of the testing will be concluded by late March or early April, whereas in the past this has been continued into May on several occasions.

Perhaps it would be of interest to mention that we are utilizing two new high volume instrument systems that have been installed here in recent months. The Motion Control, Inc. HVI 3000 System and the Spinlab 800 Series are being used in routine cotton evaluations and in fiber research programs. These perform very effectively and are most helpful when a large volume of cotton is to be tested. For example, our new Motion Control system requires only three technicians working at one time, whereas the older system (used from 1969 until June of 1982) required five and sometimes six. Also, this system is a good bit faster than the older model.

The Center is pleased to evaluate cotton for farmers, seed breeders, other research organizations, marketing firms and textile companies and we always try to give the best service possible. This particular part of our activity is given considerable emphasis, both in the quality of work and the equipment with which it is done. Mrs. Reva Whitt is in charge of this work and is assisted by eleven fiber technicians.

HONOR STUDENTS The Department of Textile Engineering at Texas Tech University is pleased that several of our students have been included in the University's honor roll for the fall semester 1982. Two students made perfect scores, attaining a 4.00 grade point average. These were Twila A. Braun of Seminole, Texas and Jane Kveton of Abernathy, Texas. Others with high averages were Stacy Stone of Seminole with a GPA of 3.77; Keith Soechting of New Braunfels, 3.63; and Charles Burt of Littlefield, 3.50, all from Texas. Chetankumar Patel of Ndole, Zambia finished the semester with a GPA of 3.54.

The University's honor roll also included a number of other textile students with GPAs of 3.00 or higher. These were Alan Buttenhoff of El Paso, Texas; Lori Alread of Dallas, Texas; Laura Cutshall of Greeley, Colorado; Sohail Barlas of Sialkot, Pakistan; Mary Ann Owen of Tahoka, Texas; and from Lubbock, Suzanne Dyess, Larry Harris, Joe Don Long, Nelson Roll and Aldrew Talbott.

It is always gratifying when the efforts of the department and its faculty are rewarded by high scholarship achievement by our students. We hope they will carry this level of scholarship with them until they graduate.

VISITORS Because of the holiday season and the Center's curtailed work schedule, we had fewer visitors during December than we normally have in other months. (Those who did visit, however, were top

TABLE I

Fiber Properties (HVI Data)

1/8" Gauge Strength	23.0	g/tex
Elongation	6.3	%
UHM Length	1.01	in.
Uniformity Ratio	79.3	%
Micronaire	3.7	

TABLE II

Yarn Properties

Spinning Machine:	Rieter M1/1 (OE)				Platt T883 (Side-Feed)(OE)				Saco Lowell Ring Frame		
Nominal Yarn Number (N_e)	6/1	10/1	16/1	22/1	6/1	10/1	16/1	22/1	16/1	22/1	30/1
Nominal Twist Multiplier	4.78	4.84	4.79	4.80	4.78	4.84	4.87	4.80	4.00	4.00	4.00
Skein Test:											
Yarn Number (N_e)	6.04	10.17	15.99	21.87	6.03	10.32	16.23	22.15	16.04	21.74	30.01
CV% of Yarn Number	1.0	1.0	1.1	1.2	1.2	1.6	1.6	1.8	1.2	1.2	1.6
Skein Strength (lbs)	382.4	220.8	130.9	91.5	398.2	230.4	129.7	84.4	143.2	100.0	66.8
CV% of Strength	2.2	2.1	2.8	3.6	3.6	2.4	3.0	3.0	3.5	2.0	4.1
Count-Strength-Product	2311	2248	2094	1999	2401	2382	2110	1872	2297	2169	2005
CV% of CSP	2.1	1.9	2.7	3.1	3.0	1.7	2.5	2.2	3.0	1.4	4.0
Single Yarn Strength Test:											
Tenacity (g/tex)	12.64	13.32	12.50	11.65	13.51	13.06	12.47	11.41	13.96	13.34	12.97
Mean Strength (g)	1250	777	446	311	1330	761	449	304	504	359	251
CV% of Break	7.0	6.1	7.4	9.9	7.6	8.3	8.0	9.8	11.0	9.8	11.8
Elongation (%)	8.6	8.4	7.3	6.9	9.9	8.5	7.4	6.9	8.3	7.7	6.9
Uster Evenness Test:											
Non-Uniformity (CV%)	15.39	15.40	15.79	16.75	13.92	13.82	14.55	15.52	17.15	20.56	23.09
Thin Places/1,000 yds	13	12	21	40	2	4	8	21	143	290	658
Thick Places/1,000 yds	92	99	108	198	35	28	27	69	390	805	1480
Neps/1,000 yds	63	94	142	390	8	32	37	144	52	117	438
Hair Count/100 yds	545	353	174	141	352	214	117	91	1506	891	950
ASTM Yarn Grade	B+	B+	B+	B	A	A	A	B+	A	B	C

TABLE III

Fiber Properties (HVI Data)

1/8" Gauge Strength	20.3	g/tex
Elongation	8.0	%
UHM Length	1.00	in.
Uniformity Ratio	80.5	%
Micronaire	3.7	

TABLE IV

Yarn Properties

Spinning Machine:	Rieter M1/1 (OE)				Platt T883 (Side-Feed)(OE)				Saco Lowell Ring Frame		
Nominal Yarn Number (N_e)	6/1	10/1	16/1	22/1	6/1	10/1	16/1	22/1	16/1	22/1	30/1
Nominal Twist Multiplier	4.78	4.84	4.79	4.80	4.78	4.84	4.87	4.80	4.00	4.00	4.00
Skein Test:											
Yarn Number (N_e)	6.00	9.90	15.61	22.04	6.04	10.10	16.19	22.17	16.23	22.18	30.71
CV% of Yarn Number	1.3	1.4	1.2	1.6	1.4	1.3	1.2	1.6	1.7	1.6	2.6
Skein Strength (lbs)	372.4	210.3	127.1	82.8	379.6	214.4	121.5	79.5	130.4	88.3	58.2
CV% of Strength	2.4	2.4	1.8	3.6	2.5	3.6	2.1	4.0	2.1	1.5	6.4
Count-Strength-Product	2233	2081	1977	1826	2294	2167	1971	1765	2120	1962	1800
CV% of CSP	2.2	1.6	1.5	3.3	1.7	2.7	1.6	3.8	1.4	2.0	4.2
Single Yarn Strength Test:											
Tenacity (g/tex)	12.38	12.50	12.05	11.22	12.74	12.37	11.86	10.57	13.14	12.42	11.74
Mean Strength (g)	1222	710	442	304	1252	719	433	287	479	333	231
CV% of Break	8.0	7.3	8.3	8.5	8.1	7.5	9.6	10.8	9.9	12.8	13.2
Elongation (%)	10.3	9.3	8.8	7.7	11.0	9.9	7.9	8.0	9.6	8.6	7.9
Uster Evenness Test:											
Non-Uniformity (CV%)	15.47	15.69	16.58	17.52	14.49	14.43	15.27	16.32	19.32	21.10	23.91
Thin Places/1,000 yds	15	20	53	99	8	5	14	50	194	430	1000
Thick Places/1,000 yds	102	132	180	278	52	35	56	106	380	842	1545
Neps/1,000 yds	60	104	185	533	16	38	67	224	32	61	386
Hair Count/100 yds	519	337	188	167	335	201	130	105	1390	1122	1249
ASTM Yarn Grade	B	B	B	B	A	A	A	B	B	C	D

quality.) Included among those with us were James Seacord, Fiber Controls, Gastonia, NC; George Overton and G. Rodney Pilsbury, Crosrol, Inc., Greenville, SC; John Tilley, Avondale Mills, Sylacauga, AL; Mr. & Mrs. A. B. Shaw, Mount Dora, FL; and A. M. S. Damas, A. H. Marcusson (Pty) Ltd., Johannesburg, Republic of South Africa.