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TEXAS COTTON QUALITY REVIEW

The International Center for Textile Research and Development (ICTRD) has conducted an annual evaluation of Texas cotton since 1980. This was initiated by the Texas Food and Fibers Commission primarily because it was known locally that the quality of Texas cotton was better than its reputation. The intent was to conduct a fiber testing and spinning evaluation of representative cottons from the major production areas in Texas and report this information to the textile industry. This ongoing program has been successful through the years and many textile and marketing companies have requested our annual report.

There is no way every bale of Texas cotton can be tested for quality, so we have resorted to obtaining two or three bales of representative production from each of the major growth areas. These are the Rio Grande Valley, the Coastal Bend area, Central Texas, the Rolling Plains, the St. Lawrence area, El Paso, and the High Plains of West Texas. Depending upon the availability of cotton and our ability to obtain it quickly, the total number of bales in our annual study has varied up to as many as twenty. Some years, however, we have used fewer samples simply because we were unable to purchase the cotton in time for the study. (One year the three bales we had ordered from one area were inadvertently put in an export shipment and sent to Eastern Europe.)

In past years we have carried the results of two typical cottons in *Textile Topics* to give examples of the quality available in Texas. This year we thought we would change from that and offer only fiber testing information to illustrate the improvement in Texas cotton.

We recall that about thirty years ago (early 1960s) many merchants and mill buyers had a rather low opinion of Texas cotton. More than one individual referred to it as "junk cotton," and in truth much of it was short, low in micronaire and undesirable in color. A great percentage was exported and used in low-quality products.

Much has happened since then, however. Independent seed breeders, Texas A&M University, Texas Tech University, the United States Dept. of Agriculture, and organizations like the Plains Cotton Cooperative Association and the Plains Cotton Growers have contributed to the improvement of Texas cotton. For example, the Plains Cotton Growers has a special committee dedicated to the improvement of Texas cotton. Considerable effort has been given to this through Texas A&M University's agricultural research program, working with the International Center. The expenditure and effort involved have resulted in much better quality of our cotton.

A big factor in this improvement has been classing by high volume instruments. After some twenty years of evaluating cotton by HVI at the Plains Cotton Cooperative Association and the International Center for Textile Research, USDA established its first full-scale HVI classing office at Lamesa, Texas in 1980. That year the Lamesa office classed every bale sent to it by instrument, and the farmers in that area were very pleased with the results. They found the cotton they were producing was better than manual classing had indicated and considerably better than its reputation.

Subsequently, HVI classing was expanded to other offices, and we understand USDA is currently classing the entire 1991 crop by these instruments. While this should be beneficial to most cotton farmers, we feel it is especially helpful to those in Texas. Before HVI classing was initiated, many producers were growing better fiber than they were getting credit for.

An illustration of what was happening came about some years ago when a producer near Robstown, Texas called and asked if we could class cotton for him. We told him we do not class cotton but could evaluate it by instruments. He sent eight samples and asked us to telephone him as soon as the results were available. He was more interested in the length than anything else. As it turned out, six of the samples measured 1-1/16 inch and the other two were 1-3/32.

When we called this person, we were a bit startled by what he told us. His story was that he had been growing cotton in the same area for many years and that each year the classing office had designated the length of his cotton as 15/16 inch. (The classing office in his area utilized manual classing only and

did not have HVI instruments at that time.)

This person continued by stating that he had gone to a lot of trouble and a good bit of expense to get a higher quality seed, and he was expecting to have greater length and possibly higher grade. The samples went to the classing office as usual and all of them came back designated as 15/16 inch. He asked what he should do, in view of the classing office calling his cotton one length and the same fiber being measured considerably longer by HVI instruments.

We told him to take the same samples back to the classing office, inform the director there what had happened and give him the information coming from the high volume instruments at the International Center. A reclass was requested and obtained, and the second time around all of the cotton was measured at 1-1/16 inch, which made our friend in Robstown quite happy. To us, this simply shows the value of classing by electronic instruments.

With that background, we are presenting in this issue of *Topics* a comparison of the fiber quality of the cottons we have evaluated during the past ten years. These are listed by year since 1981 and give length, length uniformity, micronaire and strength. All testing was done on a Motion Control HVI system.

An examination of the table below shows an improvement in length and strength of the cottons evaluated each year. The average values are calculated from the measurements made on each bale included in each year's report. Realizing that averages do not give full information, we are also presenting the range of test results. Years 1981 through 1985 show that the length of the cotton was barely one inch. Beginning in 1986, the average length improved considerably. The lower end of the range for the first five years was quite short, but this increased in 1986 and thereafter.

The increase in fiber strength of Texas cotton has been significant, also. This has come about at least partly by selecting varieties that produce greater strength. It can be seen that the strength of the cottons we have evaluated has increased by approximately 18 percent in the past ten years, and much of it more than that.

We are quite pleased with the improvement in Texas cotton, and research is continuing to make our fiber even more desirable.

Fiber and spinning tests in the annual evaluation of Texas cotton are sponsored by the Texas Food and Fibers Commission. Reports including complete data on cottons from the major production areas in Texas are available each year. Anyone caring to have copies can receive them by writing to the International Center at the address given on the back page of *Textile Topics*.

TEN YEAR COMPARISON OF TEXAS COTTON FIBER QUALITY

	Length (inches)		Uniformity (%)		Micronaire Index		Strength (g/tex)	
Year	Average	Range	Average	Range	Average	Range	Average	Range
1981	1.00	0.90 – 1.11	80	76 – 85	3.7	3.1 – 4.5	23	21 – 24
1982	0.97	0.90 – 1.08	81	78 – 89	3.7	3.3 – 4.2	24	23 – 26
1983	1.04	0.92 – 1.16	81	78 – 85	4.3	3.7 – 5.0	25	20 – 30
1984	1.02	0.91 – 1.11	80	78 – 84	3.9	3.2 – 5.2	25	21 – 28
1985	1.02	0.94 – 1.11	80	76 – 84	3.8	3.0 – 4.4	26	23 – 30
1986	1.09	1.01 – 1.21	80	78 – 82	3.7	3.1 – 4.2	26	22 – 32
1987	1.07	1.01 – 1.17	81	78 – 83	4.1	3.4 – 4.7	26	23 – 30
1988	1.05	0.97 – 1.18	80	77 – 83	4.1	3.4 – 5.0	25	21 – 28
1989	1.05	0.98 – 1.21	80	77 – 84	3.9	2.8 – 5.1	26	23 – 29
1990	1.05	0.98 – 1.22	80	79 – 84	4.1	3.6 – 4.6	27	21 – 31

ANNUAL REPORT TO TEXAS FOOD AND FIBERS COMMISSION

Most of the research conducted at the International Center is sponsored by industrial organizations and various agencies in Texas. The Texas Food and Fibers Commission (TFFC) sponsors a number of our programs and closely follows the progress of these. Our fiscal year ends on August 31, and the TFFC requests a report each year giving the results and/or progress of the projects it has sponsored. This report is due in the Commission office by November 15. The report for the past year's activities is currently being printed and we anticipate it will be sent to the TFFC by the latter part of October.

While this report is for the use of the Texas Food and Fibers Commission, it can be distributed to anyone interested. It contains ten separate reports covering the research done at the International Center on Texas cotton, wool and mohair. We will not review these here, but we will list several titles that may be of interest. These are:

- Fiber Quality of Selected Varieties of Cotton Produced in Texas
- An Improved Process for the Coverage of Neps in the Dyeing of Cotton
- Fluidity and Its Relationship to Cotton Fiber Properties
- Dyeing Fabrics Made of Cotton/Wool Blends
- Combined Influence of Gin and Mill Cleaning on Cotton Fiber and Yarn Quality
- An Initial Evaluation of the Combined Influence of Stripper Harvesting and Ginning Treatments on Cotton Quality

As we have already stated, this report is being prepared primarily for the Texas Food and Fibers Commission. However, copies will be available to interested persons.

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NEW EQUIPMENT TO BE INSTALLED

In the research conducted at the International Center there recently has been an increased demand for plied yarns. This demand necessitated a review of our capability to produce this type of yarn and ultimately led to the purchase of a new Volkmann VTS-05 two-for-one twister from the Saurer Textile Systems of Charlotte, NC.

This is a 24-spindle machine designed for coarse yarns. It will complement the twisting machinery we already have and will significantly increase our ability to produce plied yarns. Arrangements have been made with Saurer to have the machine shipped to us during September.

We expect to have the new two-for-one twister in operation by the first of October. We are pleased we could acquire this machine, and we look forward to integrating it into our research as soon as possible. We would like to express our appreciation to Saurer Textile Systems for their assistance.

VISITORS

Visitors to the International Center during August included Roger Bolick, Allied Fibers, Hopewell, VA; Danny Gilmore, Goulston Chemicals, Monroe, NC; John T. Childers, Henkel Corporation, Charlotte, NC; Jim Crawford, Muleshoe, TX; Mr. & Mrs. David Kanne, Dallas, TX; Edward S. Owen, American Savio Corporation, Charlotte, NC; Richard H. Monk, Jr. and Bill Henry, Avondale Mills, Inc., Sylacauga, AL; W. Thomas Mundy, Jr., Roberts, Curry & Company, Greenville, SC; Ricardo Silerio, S & L Medical Supply, El Paso, TX; Roland Schmelzer, Westfield Farms, Dalby, Queensland, Australia; and Beatrix Brisset, Paris, France.

On August 7 a group of cotton executives from Poland visited the Center. The group included Jerzy Sobieraj, Textilimpex Co. Ltd., Lodz; Mieczyslaw Musial, Surtex, Lodz; Zygmunt Gorniak, Gigatex, Lodz; Eugeniusz Wojciechowski, Eskimo Spinning Mills, Lodz; Ignacy Jozkowicz, Friendship Spinning Mills, Sawiercie; Arkadiusz Ciupinski, Widzew Spinning Mills, Lodz; Aleksander Staniszewski, Bielbaw Spinning Mills, Bielawa; and Zbignew Roskwitalski, Gdynia Cotton Association, Gdynia. They were accompanied by Geoffrey Audas, Cotton Council International, London, England; David Collins, Cotton Council International, Washington, DC; and Piotr Graff and Gedeon Werner, CACI Language Center, Arlington, VA. Also, the Hampshire County (England) Youth Orchestra, a group of 120 vibrant young musicians, visited the Center on August 15 as part of their U.S. tour itinerary.

Other groups visiting included 45 students from Mukogawa Women's University, Kobe, Japan, accompanied by their instructor, Takeshi Yasuda. Another was a group of farm editors from Farm Progress Companies, Carol Stream, IL. This group included Dan Crummett, Allen Moczymgemba, Alan Newport and Chuck Roth, Oklahoma Farmer-Stockman; Charles Taylor, Texas Farmer-Stockman; Andy Anderson, The Tye Company, Lockney, TX; and Jerry Griffin, The Griffin Group, Lubbock. They were accompanied by Dr. Bill Bennett, College of Agriculture, Texas Tech University.