

## **ORGANIZATION OF THE BELTWIDE COTTON UTILIZATION CONFERENCE**

**Kearny Q. Robert and D.V. Parikh**  
**USDA-ARS**  
**Southern Regional Research Center**  
**New Orleans, LA**

### **Abstract**

The Cotton Utilization Conference is the newest technical research conference of the National Cotton Council of America's Beltwide Cotton Conferences. The Utilization Conference has been organized to continue the work of the Cotton Textile Processing and Nonwovens Conferences, which have rejoined forces as continuing symposia within the new Utilization Conference. Additional forums for reporting research results in Cotton Textile Chemistry, New Products, and Spinner-Breeder interactions are being developed. The Utilization Conference is envisioned as a key element in the research response of U.S. cotton to the critical need for adaptation to a changing global market.

### **Background**

The Beltwide Cotton Textile Processing Conference was instituted under the chairmanship of Dr. K. Q. Robert in 1992 as a forum for cotton textile researchers. During the 1990's several topical symposia were organized through the Textile Processing Conference. These included such topics as Cotton Blends, Textile Chemistry, and Nonwovens. In 1998 the Nonwovens Symposium was spun off as a separate but coordinated activity in the form of a Nonwovens Conference under the leadership of Dr. D. V. Parikh. Workshop discussions held during the 2003 Textile Conference in Nashville revealed that the precipitous collapse of the domestic textile industry had been the occasion for a general realignment within the cotton utilization research community. Accordingly, the utilization aspect of the Beltwide Cotton Conferences has been reorganized so that research reporting can better reflect the new realities of academic, governmental, and industrial R&D environments. As part of that reorganization, the Cotton Utilization Conference has been newly formed by rejoining the forces of the Textile Processing and Nonwovens Conferences, which will carry on their work as continuing symposia within the Utilization Conference. The new Conference, therefore, is well structured and positioned to play a key role in cotton's research response to:

- ✓ The loss of a significant portion of domestic mill markets;
- ✓ The ability of the U.S. cotton industry to follow lost markets overseas in the short run;
- ✓ The need to preserve the competitiveness of our remaining textile manufacturing capacity;
- ✓ The need to develop new products and future markets for cotton and cotton byproducts; and
- ✓ The long-term goal of rebuilding the U.S. textile manufacturing sector.

Papers presented at the Utilization Conference are published annually by the National Cotton Council of America in the Beltwide Proceedings, which were converted from printed to electronic form in 2002. Beginning with the Textile Conference in 1992, more than five hundred research and technical papers on cotton utilization have been published there (see Figure 1).

### **Report from the 2004 Conference**

#### **Chairman's Summary**

The restructuring of the Cotton Utilization Conference this year marked the beginning of a rebuilding process for reporting of cotton utilization research. It successfully demonstrated the viability of the Textile and Nonwoven activities as continuing activities within the new structure, and provided a platform upon which Chemistry research reports can be organized in the future. The consolidation of the Utilization Conference was crucial for achieving coordination of the programs of Textiles, Nonwovens, and Chemistry. Joint activities with other Conferences (Improvement, Ginning, Engineering, and Quality) proved to be very useful toward development of a robust interface between bale-utilization and bale-production research. A feeling which emerged from the 2004 Conference was that the maximum degree of program coordination between the Textile Symposium and the Quality Measurements Conference will be highly desirable. The major technological issues in organizing the Conference this year were: (A) the Council's evolution from paper forms to an electronic Request-for-Presentation web site, and, (B) the almost unanimous conversion by speakers this year from projection slides to computerized presentations. Both of these changes provided learning experiences and challenges for the organizers. The electronic title-submission and program-development processes are a big

improvement, and worked very well on the whole. New hardware and software deployments, however, along with associated logistical procedures will have to be worked out for next year to cope adequately with the computerization of presentations.

### **2004 Activity Report**

The Beltwide Cotton Conferences were held in San Antonio, Texas, in January 2004. Attendance increased by more than 10% overall, to over 3,500 participants. Important activities in this inaugural year of the Utilization Conference included: a plenary session devoted to a Research Overview, the 13<sup>th</sup> Cotton Textile Processing Symposium, the 7<sup>th</sup> Cotton Nonwovens Symposium, the Textile Chemistry & New Products Symposium, a Spinner-Breeder Symposium (joint with the Improvement Conference), a Joint Session with the Quality Measurements Conference on Textile Fiber Quality, and a Joint Session with the Engineering Systems and Ginning Conferences on Cotton Moisture. These assemblies comprised 71 technical presentations, including 33 verbal presentations in the joint sessions, and 36 verbal presentations and two poster presentations within the regular sessions. The speakers included a mix of academic, industry, government, and foreign researchers. Participation by the greige processing industry in the Textile Processing Symposium continued to decline. This is a recent Beltwide trend which was undoubtedly aggravated this year by the continuing downturn in the textile industry and the proximity of the ITMA exhibition in late 2003. The program of the regular sessions was strongly impacted by the predominance of Federal researchers. Ceremonial and welcoming addresses at the Nonwovens Symposium were provided by The National Cotton Council's Director of Technical Services, Dr. Andrew G. Jordan, and the Associate Director of the USDA-ARS Mid-South Area, Dr. Deborah L. Brennan.

### **Utilization Symposia**

The Utilization Conference is organized around several topical symposia. Some of these symposia may be held every year, and some less regularly or in joint sessions, as is appropriate to the needs of the scientists and the progress of research. These continuing themes are briefly described as follows:

#### **Research Overview**

The keynote of the Conference will be a session devoted to overviews of cotton utilization research at the leading research institutions. This session will usually be the opening session of the Conference, and a plenary session of all the Symposia. Reports from cotton organizations may be supplemented with workshops and reviews of specific topics that are of urgent interest at the time.

#### **Textile Processing Symposium**

The continuing mission of the Cotton Textile Processing Symposium is to help producers and spinners find ways to work together to make better raw material, better textile products, and bigger profits for all. The Symposium will focus on the profitability crisis in the cotton textile processing industries. The conference will explore results of the latest research into practical aspects of cotton's utility value as a raw material for textile processing. The relationship between fiber properties and cotton's processability will be highlighted as cotton researchers discuss how cultural, harvesting, and ginning factors affect the processing success of cotton in the mill. We will review the current research progress toward a better definition of measurable fiber processability for the manufacturing industries.

#### **Nonwovens Symposium**

The Nonwovens Symposium is taking place at a time when this cotton market has been traditionally dominated by synthetic fibers, and when textile manufacturers face increasingly severe international competition from low-wage countries. The biggest possibilities for increased domestic consumption of cotton fiber lies in the growth area of nonwovens. More than ever in nonwovens, the industry needs to develop new products and high-tech/high-productivity processes that will increase the consumption of cotton, increase the value of cotton-based products, and provide value-added products that are better prepared in the U.S. than elsewhere in the world. The enormous throughput of the new spunlaced nonwovens lines, along with their associated extremely low per-unit labor costs and huge technological and capital requirements, make them naturally suited for North America, where they are exploding. Cotton's usage in this burgeoning market is beginning to really take off. Flammability is an area where cotton can show greater merit over thermoplastic manufactured fibers. The inherent superiority of cotton absorbency needs to be exploited better in nonwoven fabric constructions for exponentially emerging markets such as medical and consumer disposable wipes.

#### **Spinner-Breeder Symposium**

This activity is based on the concept that most textile utilization problems -- particularly in preparation and spinning -- are sensitive to fiber properties. Any meaningful effort toward solutions involving fiber properties must necessarily include the

breeders. The Spinner-Breeder Symposium represents an outreach from spinners to cotton breeders at the research level to help identify better ways to evaluate and breed cotton for the best spinning properties.

### **Textile Chemistry Symposium**

The objectives of this symposium are to encourage discussions on new developments in cellulose and fiber chemistry as well as textile and composite processing and finishing chemistry. Topics of interest in cellulose chemistry may include synthesis of new cellulose derivatives, their characterization by infrared, LASER, X-ray diffraction, one and multi-dimensional nuclear magnetic resonance methods, dynamic mechanical and electrical spectrometry, and the like. Topics of interest to those who practice composites and textile processing and finishing chemistry may include fiber preparation and characterization, fiber modification, films and composites formation, textiles preparation, wet finishing, permanent press, wrinkle recovery, stain resistance, soil resistance, laundering, cotton crosslinking, flame retardance, dyeing, and enhancement of chemical processes by use of catalysts, enzymes, photochemistry, microwave, bi-frequency cavitation, and ultrasound methods.

### **New Products Symposium**

The New Products Symposium is devoted to research on new inventions with cotton lint, stalks of the harvested cotton plant, and other cellulose as starting materials. The inventions could be new artifacts or processes that serve emerging needs in industry and society, as well as expand the use of cotton. Of particular interest are product opportunities that can open new markets for large-volume uses for cotton and cotton byproducts. The new products symposium will also encourage discussion on structuring new product development, managing new product development, new product forecasting, implementing product development, success stories, external environment analysis, intellectual property development, and aspects related to creating, capturing, and delivering value with inventions, their transformation to new products, market entry, and sustaining competition.

### **Joint Sessions**

The Cotton Utilization Research Conference is one of a dozen Beltwide Technical Conferences. The other Beltwide conferences which are most closely related to the Cotton Utilization Conference are:

- Cotton Quality-Measurements Conference
- Cotton Engineering-Systems Conference
- Cotton Ginning Conference
- Cotton Improvement Conference
- Cotton Economics & Marketing Conference.

Special joint sessions with these Conferences will be actively sought and planned at every opportunity.

### **The Future: Concept for 2005 and Beyond**

The Cotton Utilization Conference will build upon the new structure introduced in 2004. The lead activity will be a plenary Research Overview session. Other activities will include continuing Symposia on Textiles, Nonwovens, Chemistry, and Spinner-Breeder Issues. We will investigate the viability of having a separate program for New Products. These activities will be embedded more seamlessly within the Cotton Utilization Conference. The individual annual Symposia will still be organized with near Conference-level degree of organizational independence, but with program (session) coordination through the umbrella of the Utilization Conference. This new activity should be of interest to all segments of the cotton textile manufacturing and processing-machinery industries, as well as to cotton fiber researchers involved in any aspect of cotton development, production, and conversion related to utilization.

### **Acknowledgments**

The organizers gratefully acknowledge the assistance of the large number of colleagues, planners, presiders, and speakers who made the Conference a reality. In particular, we would like to extend our thanks to Leslie A. White and J. Vincent Edwards for their assistance in coordination of the Chemistry & New Products session; to Alfred D. French for his tireless efforts to organize the computerized presentations and manage the logistics of the audio-visual equipment; to Navzer D. Sachinvala for suggestions on the future of New Product Chemistry, and to Michael K. Dowd for consultation on Non-Lint (Food & Feed) aspects. Very special thanks are due to Deborah A. Richter of the National Cotton Council, and Melissa C. Dunn of USDA-ARS-SRRC for their outstanding assistance, without which this Conference would not have been a success.

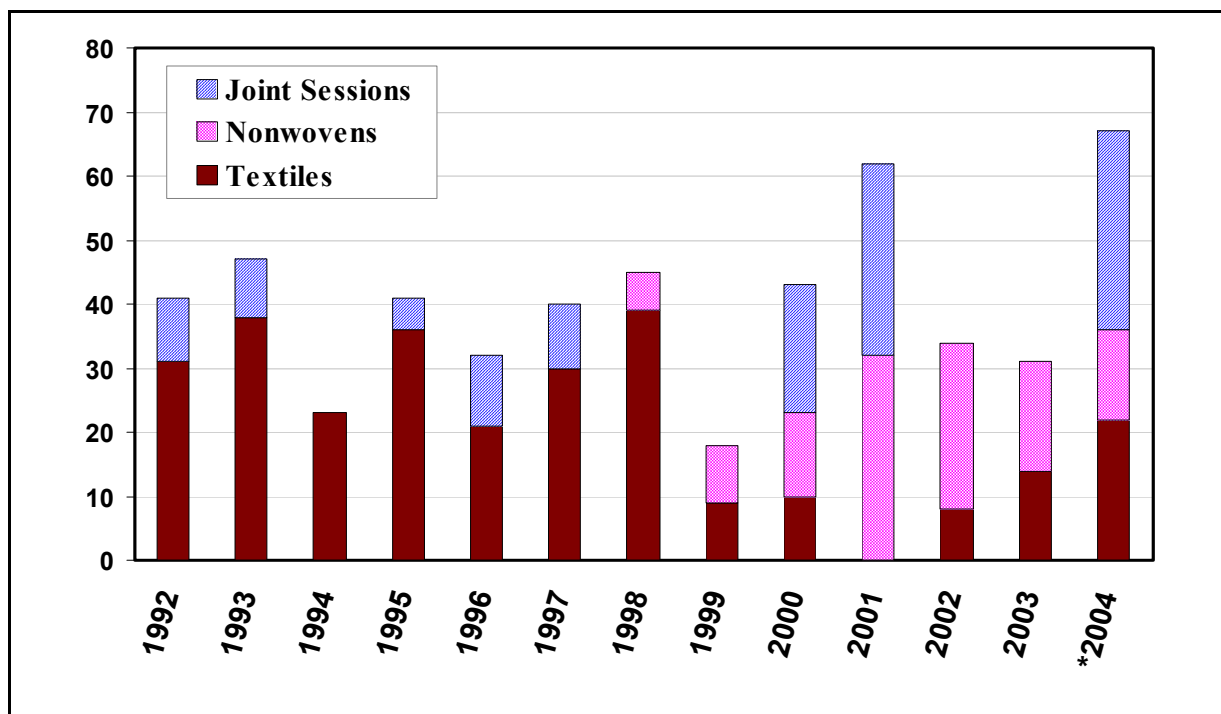


Figure 1. Beltwide cotton utilization papers published by year, 1992-2004.