

COTTON ECONOMICS RESEARCH UPDATE



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Cotton Economics Research Update
Department of Agricultural and Applied Economics
Texas Tech University

WELCOME

Our work in the Cotton Economics Research program continues to yield results that are valuable to the Texas cotton industry and to the state's economy. We in the program — faculty, staff, students, and administrators — take pride in the program's accomplishments and are encouraged by the recognition the program receives. This issue of the *Update* provides summaries of recent and upcoming results and events. If you need more detailed information about any of our activities, please contact us; we are happy to furnish more information or clarification.

— Don Ethridge ■

RECENT STUDIES

An Analysis of the Cottonseed Pricing Structure in Texas

This study examined how variations in cottonseed supply, demand, and quality factors affect cottonseed prices in Texas. Results indicate that both the product and market characteristics jointly determine cottonseed prices, and quality premiums and discounts play an important role in price determination. Further, results from this study provide preliminary evidence that the current formula pricing system for cottonseed may be overvaluing the premiums for oil and ammonia and undervaluing the discounts for moisture, free fatty acids, and foreign matter.

This research was funded through the Cotton Economics Research Institute. For more information contact Sukant Misra.

Inter-Sectoral Relationships in the Texas Cotton Industry

The general objective of this study was to identify and quantify the economic interrelationships between the production and agribusiness sectors of the Texas cotton industry. Results of the research suggested that the total revenue and marketing margin of each

agribusiness sector is affected by changes in the production sector and the total revenue of the production sector is also considerably affected by changes in the agribusiness sector. Specifically, it was observed that: a) an increase in either the ginning or the merchant/shipper marketing margins decreased production sector's total revenues; b) an increase in the price paid by domestic mills and/or ports increased the production sector's total revenue and ginning sector's marketing margin and total revenue; and c) a change in the price paid by domestic mills and/or ports did not affect the merchant/shipper sector.

This research was funded through the Cotton Economics Research Institute. For more information contact Sukant Misra.

Economics of Precision Agriculture Practices

As world trade liberalization trends continue, agricultural producers will be required to increasingly compete to produce high quality products at low prices for domestic and world markets, while attempting to use production practices that are benign to the environment. Traditionally, optimal fertilizer input use in agriculture has assumed spatial and temporal field homogeneity with respect to fertility, pest populations, and crop characteristics. Precision farming, precision agriculture or site-specific management recognizes the variability within fields and seeks to optimize variable input use under these conditions. A recent study dealing with precision application of phosphorous in irrigated cotton production in the Southern High Plains of Texas, found that optimal phosphorous application decision rules critically depend on initial phosphorous availability conditions. However, this phosphorous use in cotton study, and two other studies addressing nitrogen fertilizer use in grain sorghum and corn, indicate that the economic gains associated with enhanced fertilizer placement within fields tend to be small in the order of 3 to 5 percent increase in net revenues. Current research on precision agriculture practices in cotton production highlights possible interactions be-

tween fertility and moisture issues. Specifically, joint precise placement of nitrogen fertilizer and irrigation water within fields is being evaluated.

This research is funded through the Cotton Economics Research Institute and the Precision Agriculture Initiative at Texas A&M University. For more information contact Eduardo Segarra. ■

NEW RESEARCH PROJECTS

Demand for Cotton Gin Waste as a Roughage Ingredient in Cattle Feedlot Rations on the Texas High Plains

This research used a linear programming (LP) model to derive a demand relation for cotton gin waste (CGW) as a roughage ingredient in a cattle feedlot ration. The estimated demand relation was found to have two segments: an elastic (relatively flat) segment in the price range above \$70/ton where CGW competes well with other roughage ingredients (alfalfa, cottonseed hulls, and corn silage) for inclusion in the ration; and an inelastic (vertical) segment where CGW is the cheapest source of roughage (below \$70/ton). The LP model was solved with and without CGW to determine the impact that CGW has on ration cost. The results showed that ration cost was reduced by 5% when CGW (at \$20 per ton) was included as a roughage ingredient.

This research was funded through the Cotton Economics Research Institute. Contact Emmett Elam for more information.

Standardized Performance Analysis for Multiple Enterprise Farms

The SPA project is a continuation of previous testing and implementation of integrated production, marketing and financial analysis for the enhancement of farm-level decision making. The project employs recently updated software that compiles, analyzes, and produces financial statements for participant farms. Current work on the project includes the compilation and analysis of 1998 data and the creation of a database for 1995-1998 participant information.

The Research is funded through the Cotton Incorporated Texas State Support Committee and is cooperative with Texas Agricultural Extension Service. For more information, contact Phillip Johnson. ■

RECENT ACTIVITIES

Misra Appointed Associate Director

Dean John Abernathy has appointed Sukant Misra as Associate Director of the Cotton Economics Research Institute. Dr. Misra has been providing leadership and administrative assistance in the Institutes' activities; this appointment formalizes that role.

Student Recognized for Research Excellence

Ms. Jane A. Bondurant's research thesis entitled "An analysis of the Cottonseed Pricing Structure in Texas" was selected by the Western Agricultural Economics Association to receive the 1999 Outstanding Master's Thesis Award. This research was directed by Sukant Misra and was funded by the Cotton Economics Research Institute.

Search for New Faculty

The department of Agriculture and Applied Economics has opened a search for a new faculty position in the fields of International Trade and Policy. We expect to fill this position soon and look forward to his/her active involvement in the cotton economics research program.

Advisory Committee Meeting

This year's annual Cotton Advisory Committee meeting is scheduled for Friday, October 8, 1999. The Committee members are Carl Anderson, Curtis Griffith, Robert Joseph, Darryl Lindsey, James Supak, Dan Upchurch, Steve Verett and Tony Williams. Steve Verett is new to the Committee as a replacement for Tommy Fondren, who rotated off the Committee after three years of valuable service. Carl Anderson begins a second term on the Committee and we thank him for agreeing to do so.

Students Involved in Cotton Economics Research

Our continued dedication to quality student instruction is exemplified by the number of students who are involved in the cotton economics research programs. At the present time (Spring and Summer), they are:

Name	Degree Program	Advisor
Talah Arabiyat	M.S.	Segarra
DeDe Beatty	M.B.A.	Johnson
Blake Bennett	Ph.D.	Misra

Name	Degree Program	Advisor
Jane Bondurant	M.S.	Misra
Megan Denneing	B.S. (Senior)	Ramirez
Toby Dunn	M.S.	Misra
Jim Ed Field	M.S.	Misra
Matt Griffin	B.S. (Senior)	Misra
Rob Harrison	B.S. (Senior)	Misra
Kevin Hoelscher	M.S.	Misra & Ethridge
Craig Johnson	B.S. (Senior)	Johnson
Bridget Killgore	M.S.	Ramirez
Jeannie Nelson	M.S.	Misra
Shawna Swink	B.S. (Senior)	Ethridge
Kelly White	B.S. (Senior)	Johnson
Jay Youngblood	M.S.	Johnson
Man Yu	Ph.D.	Segarra

Misra Visits Switzerland and Germany

Sukant Misra was invited by the Institute for Textile Machinery and Textile Industry, Zurich, Switzerland, to present a seminar at the Textile Research Seminar on July 6, 1999. Misra made a presentation to the faculty and students of the Institute in Zurich on July 5, regarding the cotton economics research activities of the department. On July 6, he spoke at the Textile Research Seminar about the "Importance of Accurate Price Information to the Cotton Industry." Representatives of major research institutes and the textile industry from Western Europe attended the seminar that was held in Klippeneck, Germany. While in Zurich, Misra visited the Swiss Federal Research Station for Agricultural Economics and Engineering in Tanikon and the Swiss Federal Research Station for Agroecology and Agricultural in Reckenholz.

Update on Electricity Deregulation

The Texas legislature recently passed legislation that will move most of Texas toward electric utility deregulation by 2002. ERCOT (Electric Reliability Council of Texas) covers most of Texas south of the Panhandle/South Plains region, and will be the first area to deregulate. SPP (Southwest Power Pool) will not be deregulated until it is determined that sufficient competition exist in the region to support deregulation. Many challenges will face electric cooperatives and their rural consumers under a deregulated market. While the effects of deregulation on electric utility rates for rural and agricultural consumers are unknown, under a deregulated market consumers will be faced with different rate structures

and possible rate increases under certain conditions. Agricultural producers will need to evaluate alternative management strategies to adapt to this new market environment. Previous research looked at the impact of increased electric rates on individual farm returns and on the regional economy (see January 1999 Cotton Economics Research Update). Additional research on this topic addressing the use of distributed generation technologies and customer response to rate structure changes had been proposed by the Departments of Agricultural and Applied Economics and Mechanical Engineering. ■

CONTACT INFORMATION

New Web Site and E-Mail Address

The Cotton Economics Research Institute now has a Web Site of its own. Information on current research projects, publications, activities, etc., can be obtained through this site at:

<http://www.aeco.edu/cer institute.htm>.

The new e-mail address for the Institute is cer@ttu.edu.

For more information on cotton economics research, contact the department at:

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