



# Cotton Economics Research Update

January 2000

Agricultural and Applied Economics

## Welcome

**G**ood things continue to evolve in our program. Our new faculty are bringing additional talent and new activity in both teaching and research. You will see a bit of that impact in some of the activities summarized in this newsletter issue.

Please take note of our activities with our Advisory Committee; these people, and their input, continue to be a strong asset for our research program. The upcoming symposium on cotton economics research is in part a result of their thoughts. Also note our extensive activities at the Beltwide Cotton

Conferences. I would emphasize that research from the Cotton Economics program is also presented at a number of other conferences and in important journals; it is not limited to cotton circles alone.

We need to remind you that this newsletter exists to give you a brief insight into what we are doing. If you have questions or want details, please contact us.

Don Ethridge

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### Recent Activities

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## New Projects

### First Annual Research/Extension Symposium on Cotton Economics Issues Scheduled for April 2000

The Cotton Economics Research Institute is sponsoring a research/extension symposium in April 2000 in collaboration with the Texas Agricultural Extension Service. The motivation behind this symposium is to: 1) deliver important research results directly to selected agricultural extension scientists for further dissemination to the cotton industry; and 2) provide an opportunity to our extension colleagues to evaluate the relevancy of our research activities and to help shape the future research focus of the cotton economics research program.

The symposium will be funded through the CER Institute and Cotton Incorporated. For more information contact Sukant Misra or Don Ethridge.

### Developing a Web-Based Cotton Harvesting Cost Calculator

This project will develop a web-based harvesting cost calculator to provide producers a user-friendly means to accurately estimate harvesting cost for a specific harvesting equipment configuration. It will also allow users to compare costs of alternative harvesting equipment configurations and identify the least cost configuration for their individualized production scenarios. Funding from Cotton Incorporated. Period: 2000. For more information contact Sukant Misra.

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# Recent Studies

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## **Texas-Oklahoma Producer Cotton Market**

The size of the 1998 crop marketed through the Texas-Oklahoma spot market decreased considerably from the previous year and the average producer price declined for the third year in a row. The average price received by producers during the 1998/99 marketing year was 51.14 cents/lb., which was 6.85 cents/lb. lower than the previous marketing year. The 1998 crop was generally of good quality. Except for the first digit of the color grade, staple, and strength, the average of all other quality characteristics showed improvement compared to the 1997 crop. With the exception of level 2 bark and first digit of the color grade, price discounts for the 1998 crop increased for all quality attributes, while premiums for staple and strength both increased.

This research was funded by the Texas State Support Committee and Cotton Incorporated. Contact Sukant Misra for more information.

## **Cost Comparison of Alternative Cotton Harvesting Systems**

This research provides cost estimates of alternative stripper and picker cotton harvesting systems to determine the least cost harvesting method for a typical cotton operation in Texas. It also provides a simple method that can be employed by cotton producers in various parts of the United States to determine the cost of harvesting given individualized production scenarios. Results of the study indicate that a typical Texas cotton producer (with a yield of 480 pounds per stripper harvested acre and a farm size of about 700 acres) would minimize the cost of harvesting by investigating in a four-row stripper without or with a bur-extractor. For picker harvesting with an average yield of 815 pounds per acre and a farm size of about 700 acres, the harvesting cost would be minimized with the ownership of a two-row picker.

This research was funded through Cotton Incorporated. For more information contact Sukant Misra.

## **Input Use, Yields and Quality of Cotton in the Texas High Plains**

This study develops six response functions relating cotton output in terms of lint yield, seed yield, turnout, and quality attributes, (micronaire, strength, and length) to input use choices and management practices employed in the production process. The response functions allow for examination of the effect of varying factors of production within the control of producers such as water and phosphorus application rates, fertilizer application methods, and variety selection on output levels, while taking into consideration different prototypical weather scenarios.

This research was funded by CSREES/USDA, through the International Cotton Research Center. For more information contact Octavio Ramirez.

## **Bt Resistance Under Conventional Insecticide Use and Efficient Bt Refuge Policies**

This study identifies efficient Bt cotton refuge policies accounting for production and insecticide resistance. Refuge policies refer to limits on the proportion of total acres planted with Bt cotton. Results indicate that Louisiana producers are using considerably more conventional insecticides and are experiencing significant per-acre losses under current treated-refuge policy. Efficient untreated-refuge policy derived in this study was found to be superior to the current treated-refuge policy with respect to long-run producer profitability, conventional insecticide use, annual profit volatility, and insecticide resistance. Results further indicate that the effectiveness of conventional insecticides increases using untreated refuge, leading to a reduction in Bt resistance.

This research is from Dr. Livingston's Ph.D. dissertation at N.C. State University. Contact Mike Livingston for more information.

## **Marketing Strategy Based on Mean Reversion in Cotton Future Prices**

The purpose of this research was to develop and test a simple marketing strategy based on mean reversion in cotton futures prices. Mean reversion is the tendency for cotton futures prices to revert to their long-run mean value. A marketing strategy based on mean reversion calls for selling cotton futures when the price is above the long-run mean. This strategy was applied for the period 1981-99 using the December cotton futures contract with hedges placed on March 1 and lifted on December 1. The average price received using the strategy was 2.47 cents per pound higher than that from cash marketing cotton at the harvest price.

This research was funded by the Texas State Support Committee and Cotton Incorporated. For more information contact Emmett Elam.

# Recent Activities

## Advisory Committee Meeting

The Cotton Economics Research Advisory Committee (Carl Anderson, Curtis Griffith, Robert Joseph, Darryl Lindsey, James Supak, Dan Upchurch, Steve Verett, Tony Williams) met on October 8, 1999. Principal Investigators gave oral reports on projects, and the committee met with students working on Cotton Economics projects. Dean John Abernathy met with committee and Associate Dean Robert Albin joined the meeting as the major events of the previous year were reviewed. The committee closed with their remarks and recommendations for the CER program.

## Biennium Report of Cotton Economics Research During 1997-99

The department has produced a biennium report of research activities and accomplishments in Cotton Economics Research which is conducted within the Cotton Economics Research Institute at Texas Tech University. If you are interested in receiving a copy, please call or write to the department. You can also access this report on our web page, [www.aeco.ttu.edu/publicationpage.htm](http://www.aeco.ttu.edu/publicationpage.htm).



## Department Activities at the Beltwide Cotton Conferences

Thirteen faculty and students from the Agricultural & Applied Economics department attended the National Cotton Council's Beltwide Cotton Conferences in San Antonio, held January 4 - 8, 2000. Papers and authors were:

Jeannie Nelson, Sukant Misra and Alan Brashears. "Economic Comparison of Alternative Cotton Harvesting Systems."

Kalyan Chakraborty, Don Ethridge, and Sukant Misra. "How Different Attributes Contribute to the Price of Cotton."

Kevin Hoelscher, Kalyan Chakraborty, Sukant Misra, and Don Ethridge. "An Estimated 1999 Crop Pre-Season Price Schedule for the Texas and Oklahoma Cotton Markets."

Don Ethridge, Shuana Swink, and Kalyan Chakraborty. "U.S. Manufacturer's Cotton Premiums and Discounts."

Emmett Elam. "A Marketing Strategy for Cotton Producers Based on Mean Reversion in Cotton Futures Prices."

Blake Bennett and Sukant Misra. "Inter-Sectoral Relationships in the Texas Cotton Industry."

Kalyan Chakraborty, Kevin Hoelscher, Sukant Misra, and Don E. Ethridge. "Texas-Oklahoma Producer Cotton Market Summary: 1998/99."

Kelly White, Diana Beaty Jones, and Phillip Johnson. "Roundup Ready Versus Conventional Cotton Varieties: Case Studies From The Southern High Plains Region of Texas."

Michael Livingston. "B.T. Cotton Refuge Policies That Maximize Long-Run Production Value."

Octavio Ramirez, Dan Krieg, Don E. Ethridge, Dean Ethridge and Megan Denning. "Input Use, Yields and Quality of Cotton in the Texas High Plains."

David Willis and Octavio Ramirez. "Trends in Cotton Yields and Yield Variability in the Texas High Plains: An Irrigated Versus Dryland Comparison."

Man Yu, Eduardo Segarra, H. Li, R.J. Lascano, C. Chilcutt, L.T. Wilson, K. Bronson, and S. Searcy. "The Economics of Precision Agricultural Practices in Cotton Production."

Michael Livingston. "Development of Bollworm and Budworm Resistance to BT Cotton with Conventional Insecticide Use."

# Contact Information

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## 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 e-mail address for the Institute is:

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