RESULTS OF EXTENSION RECOMMENDATIONS AND INTEGRATION OF NEW TECHNOLOGIES INTO TENNESSEE COTTON VERIFICATION TRIALS

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Abstract

Cotton is an important crop in Tennessee and has ranked first or second in terms of cash receipts since 1994. Cotton harvested acreage for the last six years has ranged from 450,000 to 660,000. The state average yield per ace for the same period of time has varied from a high of 726 lbs. of lint in 1994, to a low of 425 lbs. in 1993.

Introduction

In 1996,1997 and 1998 the University of Tennessee Agricultural Extension Service and Agricultural Experiment Station, along with the cooperation of cotton farmers, conducted on-farm cotton verification trials in West Tennessee. Counties participating in the Cotton Verification Trials (CVT) were Fayette, Gibson, Haywood, Lauderdale, and the Milan Experiment Station. As part of the program, all University of Tennessee recommended practices are followed.

Objectives

- To verify to producers that recommended technology can increase profitability.
- To apply all recommended practices as needed to maximize profits.
- To maintain or enhance the soil and water resource base in the field.
- To identify areas of cotton management for future research.
- To develop and strengthen the databases for economic analysis.
- To increase research, Extension, and producer expertise in cotton production and profitability.

Data Collection

Cooperators are chosen by the county Extension staff and agree to farm the field as directed by the CVT Coordinator and the county Extension agent using the research-based recommendations as outlined in University of Tennessee Agricultural Extension Service PB1514 *Cotton Production in Tennessee.* Fields are visited weekly by the CVT Coordinator during production and harvest periods. The county Extension agent collects field data twice weekly and maintains regular contact with the CVT Coordinator, Cotton Specialist, and the producer. Data collected includes field history, soil test, equipment used, planting specifics, chemicals applied, growth parameters, yield and weather data.

New Technology

As new technology hits the market, there is not adequate time for the Experiment Stations to perform the necessary research to determine what recommendations need to be made with regard to this technology. The CVT program has been able to evaluate new technology and its effect on a farmer field basis. Some of the new technology applied includes COTMAN - a computerized management program which combines in depth field data with weather data to assist in making decisions. Some of these decisions include timing of growth regulator, termination of insect spraying, and timing of harvest aids. Other technology such as transgenic cotton varieties and seed treatments have been examined with favorable results.

Economic Analysis

An economic analysis is performed by an Extension Area Farm Management Specialist based on the data collected. The analysis takes into
account estimated revenues, variable and fixed costs, and assigned land expenses (1/4 production), for each field. The FSA cotton loan schedule is used to assign premiums or discounts to cotton prices in determining returns per acre. Break-even prices and yields are also computed. A weighed average is calculated based on the acres in each field. Table 1 is a comparison of Tennessee CVT yields to Tennessee state average yields in 1996 - 1998. Table 2 compares 1996 - 1998 break-even prices above total expenses. Table 3 compares returns per acre over total specified costs 1996 - 1998.

Summary

The CVT fields were all profitable. The CVT fields averaged $99 per acre return in 1996, $141 per acre return in 1997 and $101 in 1998. In 1996, the CVT fields surpassed state averages by 65 lbs. lint per acre or $46 per acre. However, in 1997 the CVT fields surpassed county averages by 220 lbs. lint per acre or $145 per acre. In 1998, the CVT fields averaged 184 lbs. lint per acre above the estimated Tennessee state average or $129 per acre. Break even prices above total expenses have ranged form $.57 per lb. of lint in 1996 , $.51 per lb. of lint in 1997, and $.58 per lb. of lint in 1998. University of Tennessee research based recommendations not only work, but are also profitable. The data collected has also been used to fine tune the University of Tennessee's cotton budgets. New technology has been found to have a place in West Tennessee cotton

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production and to be an area for future research. One of the greatest impacts of the Tennessee Cotton Verification Trial program has been the increased knowledge Extension agents and cotton producers have gained from an in depth analysis of cotton production and management.

References

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Table 1. Comparison of CVT Yields to State Yields 1996 - 1998.

		Lbs./Acre	
Location	1996	1997	1998
Fayette1	1011	853	-
Fayette2	-	995	722
Gibson1	505	781	635
Gibson2	626	903	-
Haywood	681	635	610
Lauderdale	714	1058	953
Weighed Avg.	676	882	777
State Avg.	611	662	593
Difference(lbs.)	65	220	184
Difference($)	$46	$145	$129

- Did not participate

Table 2. Breakeven Prices Above Total Expenses. CVT 1996 - 1998.

		$/Lb.	
Location	1996	1997	1998
Fayette1	.49	.54	-
Fayette2	-	.53	.65
Gibson1	.61	.48	.59
Gibson2	.64	.53	-
Haywood	.56	.61	.67
Lauderdale	.54	.43	.50
Weighed Avg.	.57	.51	.58

- Did not participate

Table 3. Estimated Returns Per Acre Over Costs. CVT 1996-1998

		$/Acre	
Location	1996	1997	1998
Fayette1	222	100	-
Fayette2	-	141	46
Gibson1	51	148	74
Gibson2	46	104	-
Haywood	103	26	35
Lauderdale	121	234	172
Weighed Avg.	99	141	102

- Did not participate
Differences may occur due to rounding.