

ECONOMICS & TILLAGE PRACTICES IN ROUNDUP READY COTTON

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Abstract

Replicated large scale commercial plots were established over a three year period. The study was done at the Monsanto Center of Excellence, Kevin Hoke Farm, Jonesboro, Arkansas. The objective of the study was to compare economics of various tillage practices and herbicide programs in Roundup Ready Cotton. All studies were brought to and kept at commercially acceptable weed control.

Materials and Methods

During the 1998, 1999 and 2000 season Roundup Ready Cotton tillage and herbicide systems were economically compared at the Kevin Hoke Farm, east of Jonesboro, Arkansas. The variety of cotton used in all trials was Paymaster 1218 BR, which is a Bollgard Roundup Ready variety.

The site and systems compared are as follows.

Tillage Systems

The 1998 conventional tillage cotton was disked with 2 passes, hipper with 1 pass and a bed conditioner 1 pass. The 1999 conventional tillage cotton was disked with 2 passes hipper 1 pass and a bed conditioner 1 pass. The 2000 conventional cotton was disked 1 pass, rehipped 1 pass, the bed conditioned 1 pass and plow 2 passes in season.

The 1998 conservation tillage cotton was hipped 1 pass and bed conditioned 1 pass. In 1999 conservation tillage cotton was rehipped 1 pass. In 2000 conservation tillage cotton was rehipped 1 pass and bed conditioned 1 pass.

The No-Tillage System for the 1998, 1999 and 2000 seasons consisted of no tillage.

Fertilizer Program

Conventional tillage system in 1998, 1999 and 2000. 206 pounds of 50-25-24 and 300 pounds of liquid 32-0-0.

Conservation tillage system in 1998, 1999 and 2000. 206 pounds of 50-25-24 and 300 pounds of liquid 32-0-0.

No-tillage system in 1998, 1999 and 2000. 206 pounds of 50-25-24 and 300 pounds of liquid 32-0-0.

Herbicide Program

Three herbicide programs were used each year. The herbicide programs varied from year to year. As a result, the 3 herbicide programs were averaged together.

Row Spacing in Each System. Cotton was on 38 inch rows and the ultra narrow row cotton was 7.5 inch rows.

Weather

The cumulative rainfall for 1998 was similar to the 30 year average. The cumulative rainfall for 1999 and 2000 was below the 30 year average. (Graphs 4 & 5)

Results

The production costs for the cotton systems were averaged across 1998, 1999 and 2000. (Graph 1) The no-till cotton had the lowest costs (\$545.000/A) of the three tillage systems. The conventional tillage system had the next lowest production costs (\$561.00/A). Followed by the conservation tillage system at \$578.00/A. The ultra narrow row cotton system had the highest three year production costs of \$604.00/A.

The yield for each tillage system for 1998, 1999 and 2000. (Graph 2)

In 1998, the conventional tillage system had the highest yield of 899 lb/A. The conservation tillage system had the next highest yield at 869 lb/A, followed by the no-tillage cotton system at 843 lb/A and the ultra narrow row cotton at 757 lb/A.

In 1999, the ultra narrow row cotton system had the highest yield at 909 lb/A. The conservation cotton tillage system had the next highest at 903 lb/A, followed by the conventional system at 759 lb/A, and the no-till cotton system at 741 lb/A.

In 2000, the conservation cotton tillage system had the highest yield at 1156 lb/A. The no-tillage cotton system had the next highest at 1053 lb/A, followed by the conventional system at 1030 lb/A and the ultra narrow row at 816 lb/A.

The profit for each system was based on \$0.67/lb for all cotton.

(Graph 3)

In 1998 the conventional cotton tillage system had the highest profit at \$25.00/A. The conservation and no-tillage cotton systems had the next highest at \$10.00/A, followed by the ultra narrow row system at -\$101.00/A.

In 1999, the conservation cotton tillage system had the highest profit at \$53.00/A. The no-tillage cotton system had the next highest at -\$10.00/A, followed by ultra narrow row cotton system at -\$12.00/A and conventional cotton at -\$13.00/A.

In 2000 the conservation cotton tillage system had the highest profit at \$166.00. The no-tillage cotton system had the next highest profit at \$131.00, followed by the conventional tillage system at \$107.00 and the ultra narrow row cotton system at -\$75.00/A.

The three year cotton systems average.

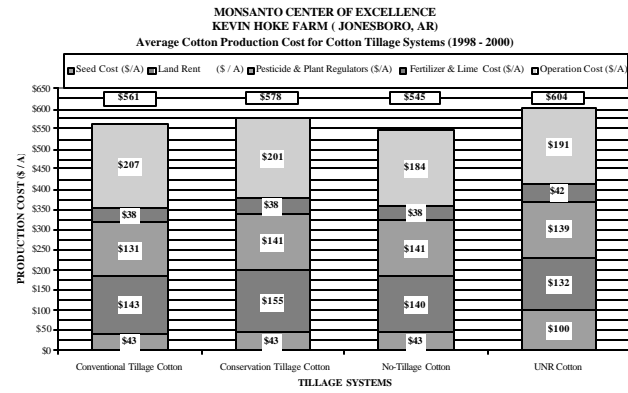
The conservation cotton tillage system had the highest average profit at \$76.00/A. The no-tillage cotton system had the next highest at \$44.00/A, followed by conventional tillage at \$40.00/A and the ultra narrow row system at -\$63.00/A.

Summary

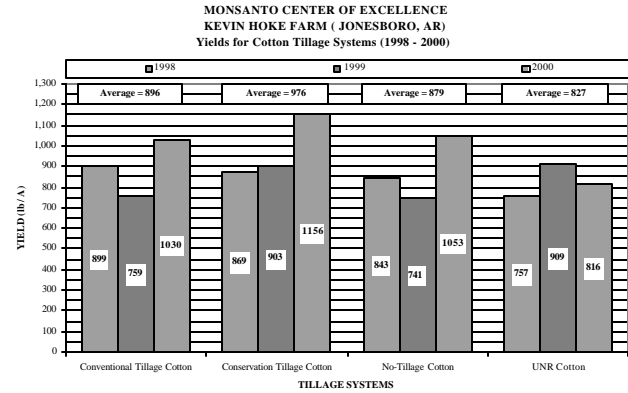
Roundup Ready Cotton in the conservation tillage system had an overall 3 year average of \$36.00/A over the conventional tillage and herbicide system. This will allow growers an opportunity to increase profits while conserving soil, moisture, fuel, labor and time when they adopt the conservation tillage system. Giving consideration to today's farm economy, these types of bottom line profit opportunities could make a big difference to many growers in the future.

References

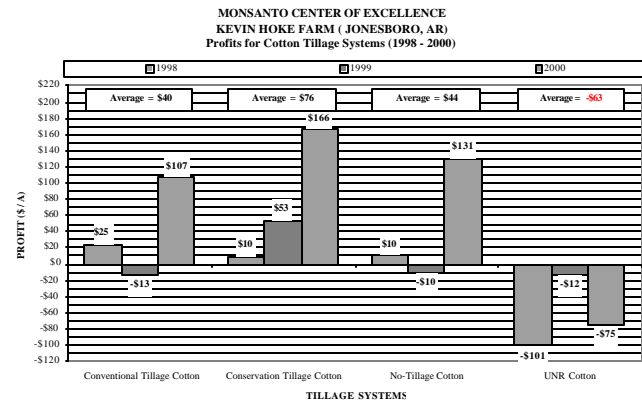
John Bradley
Kevin Hoke
Scott May
Agren, Inc.



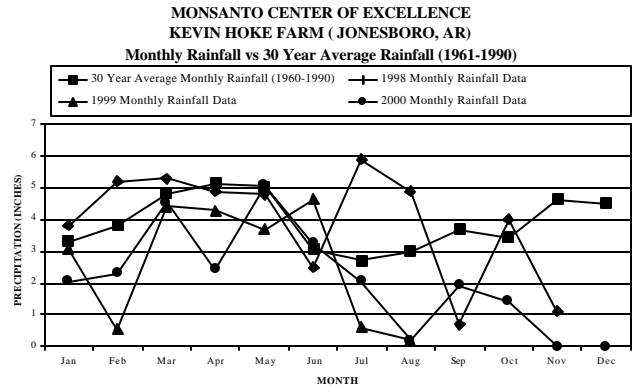
Graph 1



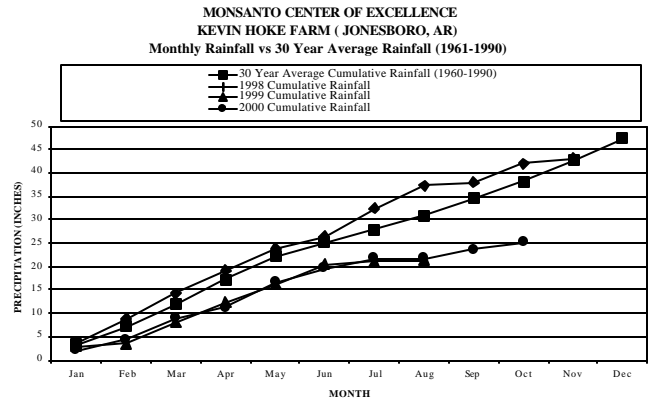
Graph 2



Graph 3



Graph 4



Graph 5