

2011 LEARNING CENTER

at Scott, Mississippi

DEMONSTRATION REPORT



RESPONSE OF FOUR DELTAPINE® VARIETIES TO IRRIGATION

Cotton is one of the most drought-tolerant crops grown in the southern US. It has been a traditional dryland crop in the South for many years due to its ability to compensate in adverse environments. However, there are key periods of cotton growth that benefit from sufficient moisture and cotton can respond to adequate water by producing yields proportional to rainfall or irrigation. The purpose of this research demonstration was to evaluate the response of four Deltapine® cotton varieties to irrigation and identify products that are well-suited to dryland conditions and/or stressed environments.

STUDY GUIDELINES

In 2011, a study was conducted at the Scott Learning Center to evaluate the response of four Deltapine cotton varieties to two irrigation treatments. Four varieties were planted on April 15 in 0.33 acre plots (24 rows wide x 200ft) with two replications. Irrigation treatments were dryland and furrow irrigated. Agronomic practices were in alignment with local standards. PGR was applied as needed. Furrow irrigation was used as needed in irrigated plots. Approximately 10 inches of rainfall occurred in the plots in 8 to 10 events throughout the growing season. Several multi-week periods without rain occurred during the season. Plots were harvested on October 18.

RESULTS

Not all of the Deltapine varieties in the study performed the same in response to drought (Figure 1). High yields in the 3 bale/acre range were recorded in several plots. DP 0912 B2RF and DP 1133 B2RF varieties both responded favorably to irrigation. DP 1137 B2RF yielded slightly more in dryland conditions than in irrigated plots. This could be due to excess vegetative growth in the irrigated plots. DP 1044 B2RF variety showed only a slight yield response (less than 50 lbs lint/acre) to irrigation.

CONCLUSIONS

The response of DP 1044 B2RF variety to irrigation indicates that it could potentially be a product well adapted for dryland conditions and stressful production environments such as double cropping and droughty or thin soils.

Drought is considered a leading cause of yield loss in cotton. Considering the expense of irrigation, identifying cotton varieties that may be able to use water more efficiently or compensate better in dry conditions, can help maximize cotton yield potential and profitability.

SOURCE:

Edmisten, K., Crawford, J., and Bader, M. 2007. *Drought Management for Cotton Production*. [Online] <http://www.ces.ncsu.edu>; McWilliams, D. 2003. *Drought Strategies for Cotton. Circular 582*. [Online] <http://aces.nmsu.edu>.

The information discussed in this report is from a single site, non-replicated, one-year demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

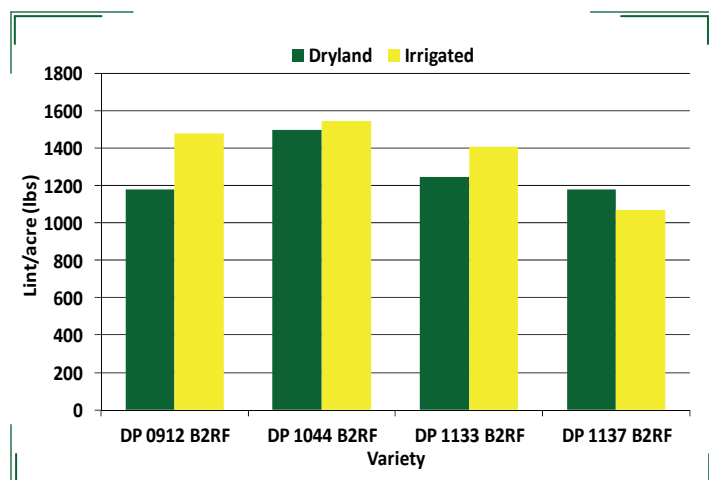


Figure 1. Average yield (pounds of lint cotton per acre) of four Deltapine cotton varieties under irrigated and dryland conditions.

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