

**COMPARISON OF CONVENTIONAL AND TRANSGENIC COTTON PRODUCTION SYSTEMS IN
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Uncertain yield levels associated with dry land production of cotton have raised questions among farmers about the cost vs reward potential of utilizing different levels of genetic modification in cotton varieties. The development of weed resistance to glyphosate and the availability of new insecticides that will control all noctuid pests of cotton has generated the need to investigate the economic returns of transgenic and conventional cotton varieties. The objective of this research was to determine the net returns of growing conventional and transgenic cotton in Alabama. A three year study (2008-2010) was conducted at research stations in north and central Alabama. Plots were irrigated in north Alabama all 3 years and irrigation was used in central Alabama in 2008 and 2009. The experimental design was a split-split plot with main plots being the varieties Stoneville 4554 B2RF, PhytoGen 485 WRF, and CT 210 conventional cotton . PhytoGen 440W replaced PhytoGen 485 in 2009 and 2010. Subplots were pre-emergence herbicides (Pre's) vs no pre-emergence herbicides. Sub-subplots were Heliothines plus tarnished plant bugs controlled vs only tarnished plant bugs controlled. Pre's had an effect on yields in north Alabama in 2008 and 2010, but had little influence on central Alabama yields. A July overspray of PhytoGen varieties with a pyrethroid insecticide increased yields consistently in north Alabama. CT 210 provided similar returns to transgenic varieties in north Alabama when Pre's were used and Heliothines were controlled. However in central Alabama the average net return for Stoneville 4554 B2RF was \$174 more per acre than CT 210 and \$102 more per acre than PhytoGen 485WRF/440 W.