ECONOMIC ANALYSIS OF THE USE OF COVER CROPS IN GEORGIA COTTON UNDER CONVENTIONAL AND STRIP-TILLAGE PRODUCTION

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Abstract

Some Georgia cotton farmers plant cover crops to help reduce soil erosion. Cover crops may also provide nutrients to the cotton as they decompose in the soil; impacting yield. However, cover crops planted prior to conventional tillage production may decompose more rapidly than those prior to strip-tillage production. Cover crops and tillage impact the overall profitability of the crop. An economic analysis was conducted using a partial budget approach to determine how cover crops and tillage impact profitability. Field trials were conducted in 2009 and 2010 in Tifton, GA where cotton was grown in conventional- and strip-tillage management following a crimson clover, rye, or wheat cover crop or bare soil. There were a total of 32 (two tillage x 4 cover treatments x 4 reps) plots in a randomized complete block design. Yield data were collected to determine gross revenue. Revenue was based on the average southeast base price for November 2009 and December 2010 ($1.0262 per pound). There were no significant differences in gross revenue or yield. Systems costs were collected for cover crop, tillage and marketing costs. Analysis of the data indicates total costs were higher for conventional tillage primarily due to higher fuel and labor costs. Costs were also higher (average $44 per acre) for cotton following all cover crops as compared to cotton following bare soil. Adjusted revenue, defined as revenue adjusted for yield, cover crop cost, tillage cost and marketing cost, favored the treatments with low seed costs, especially the no cover crop treatment. These findings are consistent with previous research on the economics of cover crops.