AN INVESTMENT COMPARISON BETWEEN CONVENTIONAL AND CONSERVATION TILLAGE EQUIPMENT FOR COTTON

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Abstract

Cotton is a capital intensive crop because of the specific inputs and equipment needed to produce and harvest high yield cotton. When investing in equipment, farmers have a choice between traditional production equipment (conventional tillage) and reduced tillage equipment (conservation tillage). Some farmers choose conservation tillage cotton production because of incentives from government programs, benefits to soil and water quality, and cost savings on labor and equipment. Others have considered switching back to conventional tillage equipment because of pressure from herbicide-resistant weeds. An investment comparison of conventional and conservation tillage production equipment was completed using the University of Georgia cotton enterprise budgets for 2011. Results indicate initial investment costs are $60,500 higher for conventional till equipment and fuel, labor, and repairs/maintenance costs are higher at $10/acre compared to the reduced till equipment. The impact of variable fuel and chemical prices on the investment decision were evaluated using a sensitivity analysis. Conventional till farmers are more sensitive to changes in diesel fuel prices and reduced till farmers are more sensitive to changes in chemical prices. However, both conventional and reduced tillage farmers are more sensitive to changes in chemical prices than to changes in diesel fuel prices because of high weed pressure in the cotton producing counties of Georgia. Breakeven prices and yields needed to realize a return on investment were also calculated. Farmers need to be able to simultaneously invest in new equipment and produce a crop. Average breakeven prices needed to invest, operate and produce cotton with conventional tillage equipment are $0.76/lb. for irrigated cotton that yields 1,100 pounds and $0.84/lb. for non-irrigated cotton that yields 700 pounds. Average breakeven yields needed to invest, operate and produce cotton using conventional tillage equipment are 981 pounds for irrigated cotton and 688 pounds for non-irrigated cotton, assuming the farmer receives $0.85/lb for their cotton and that they own their land. Average breakeven prices needed to invest, operate and produce cotton with reduced tillage equipment are $0.74/lb. for irrigated cotton that yields 1,100 pounds and $0.81/lb. for non-irrigated cotton that yields 700 pounds. Average breakeven yields needed to invest, operate and produce cotton using reduced tillage equipment are 959 pounds for irrigated cotton and 668 pounds for non-irrigated cotton, assuming the farmer receives $0.85/lb for their cotton and that they do not pay land rent.