

## SUGARCANE ECONOMIC RESEARCH IN 2010

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Projected costs and returns for the various stages of sugarcane production in Louisiana were estimated for the 2010 crop year. Production and tillage practices, as well as application rates for fertilizer, herbicides and insecticides were updated. Input suppliers and equipment dealers were surveyed in 2009 for current input prices. Specific operations for which production costs were estimated included field operations on fallow land, seedbed preparation, cutting and planting heat treated seedcane, planting cultured seedcane, field operations on plantcane, first stubble, second stubble, and third stubble, succession planting, as well as the costs of harvesting with wholestalk and combine harvesters. Costs and returns were estimated for tenant-operators, reflecting the predominant land tenure situation, and reflect a mill payment of 39 percent of production and a land rent payment of one-fifth and one-sixth shares of the "after milling crop" proceeds. Total costs of production plus overhead for crop cycles through harvest of second, third and fourth stubble were estimated and breakeven prices to cover direct and total specified production costs were estimated for one-fifth and one-sixth share rental arrangements. Summary breakeven prices to cover production costs through harvest of 3rd stubble for alternative yield levels are shown in Table 1. These values also represent production costs per pound of sugar produced at assumed yield levels. Breakeven raw sugar yield per acre of sugarcane harvested are presented in Table 2 for a selected range of raw sugar prices.

Allocated (unrecovered) sugarcane planting cost estimates were estimated for sugarcane planted in 2010. Published estimates for allocation of total planting costs as of January 1, 2011, for sugarcane planted the previous year, were as follows: cultured seed cane - \$1,103 per acre, propagated seed cane - \$768 per acre, machine planted whole stalk plant cane - \$782 per acre and machine planted billet plant cane - \$1,001 per acre. These estimates serve as a basis for the determination of sugarcane crop value associated with changes in land ownership or tenant arrangements.

A research project was completed which evaluated optimal sugarcane crop cycle length decisions with the goal of identifying an older stubble plowout decision rule based on prior year sugar yields. Outfield data for commercial sugarcane varieties in Louisiana were utilized to determine breakeven third stubble sugar yields as a function of the simple average of plant cane through second stubble yields. Across major sugarcane varieties, the breakeven third stubble sugar yield was determined to be approximately 73-75% of the simple average of plant cane through second stubble yields. This estimated relationship provides growers with a basic decision rule which can be used to plan crop cycle lengths to maximize farm net returns.

A research project was completed which included an economic analysis of alternative sugarcane fallow programs with various combinations of tillage and herbicide applications. As part of this research, the development of a spreadsheet based producer decision aid which will allow sugarcane producers the ability to estimate the cost of alternative fallow programs being utilized in the industry. Alternative tillage operation and herbicide application combinations can be evaluated to determine fallow programs which give desired levels of weed control a low cost.

Table 1. Projected breakeven selling prices for raw sugar for selected yield levels, Arrangements, harvest through third stubble, tenant-operators, Louisiana, 2010

	Selected Yield Levels				
	-20%	-10%	Base	+10%	+20%
Cane yield per harvested acre <sup>1</sup> (tons)	27.9	31.4	34.9	38.4	41.9
Sugar yield per harvested acre <sup>2</sup> (lbs)	5,863	6,596	7,329	8,062	8,795
Sugar yield per rotational (farm) <sup>3</sup> acre <sup>3</sup>	4,459	5,016	5,574	6,131	6,689
One-Fifth Land Share Rent:					
	-----cents per pound of sugar-----				
Breakeven price to recover <sup>4</sup> :					
Direct costs	16.9	15.5	14.4	13.4	12.6
Total specified costs	23.5	21.3	19.6	18.2	17.0
Total costs plus overhead	24.8	22.5	20.7	19.2	17.9
One-Sixth Land Share Rent:					
	-----cents per pound of sugar-----				
Breakeven price to recover <sup>4</sup> :					
Direct costs	16.3	14.9	13.8	12.9	12.1
Total specified costs	22.5	20.5	18.8	17.4	16.3
Total costs plus overhead	23.9	21.6	19.8	18.4	17.2

<sup>1</sup> Base average farm yield across harvested acreage of plantcane, 1st stubble, 2nd stubble, and 3rd stubble (base yield of 37 tons plantcane, 36 tons 1st stubble, 34 tons 2nd stubble, 33 tons 3rd stubble).

<sup>2</sup> Average yield in tons per acre multiplied by a 210 CRS.

<sup>3</sup> Assumes standard land rotation of 20% each of fallow, plantcane, 1st stubble, 2nd stubble and 3rd stubble.

<sup>4</sup> Breakeven prices are calculated by dividing grower's share of production into direct costs, total specified costs, and total specified costs plus overhead.

Table 2. Projected breakeven raw sugar yields for selected raw sugar price levels, harvest through third stubble, tenant-operators, Louisiana, 2010

	Selected Raw Sugar Price Levels				
	-1.0	-0.5	Base	+0.5	+1.0
Raw sugar price (cents per pound)	22.0	22.5	23.0	23.5	24.0
One-Fifth Land Share Rent:					
	-----pounds of sugar per harv. acre-----				
Breakeven yield to recover:					
Direct costs	4,779	4,672	4,571	4,474	4,380
Total specified costs	6,516	6,371	6,233	6,100	5,973
Total costs plus overhead	6,883	6,730	6,584	6,444	6,309
One-Sixth Land Share Rent:					
	-----pounds of sugar per harv. acre-----				
Breakeven yield to recover:					
Direct costs	4,590	4,488	4,391	4,297	4,208
Total specified costs	6,259	6,120	5,987	5,860	5,738
Total costs plus overhead	6,612	6,465	6,325	6,190	6,061