

ECONOMIC RESEARCH IN SUGARCANE IN 2007

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Projected costs and returns for the various stages of sugarcane production in Louisiana were estimated for the 2007 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 2006 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 20 percent of the "after milling crop" proceeds (12.2 percent of production). 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 developed for 2007 for all phases of sugarcane. Total allocated planting costs for sugarcane in 2007 was \$1,093.11 per acre for cultured seedcane planted, \$717.67 per acre for propagated seedcane hand planted and \$782.78 per acre for propagated seedcane machine planted. Allocated planting costs for plantcane in 2007 was estimated at \$721.18 per acre for wholestalk planted cane and \$888.80 per acre for billet planted cane.

The harvest of sugarcane in Louisiana represents a major cost item in the production of crop in the state. Current information on the impact of various factors on the performance and cost of this production phase is important to growers in conduction these harvest operations as efficient and cost effective as possible. As unloading time at the mill is a primary factor influencing the efficiency of harvest operations on the farm, developing harvest schedules for groups of farms to minimize waiting time at the mill is important for efficient and cost effective operations at both the farm and mill.

A linear programming model was developed which would simulate the harvest and delivery of sugarcane from several farms to a common mill. The purpose of this linear programming model was to determine a harvest schedule for a group of farms which would minimize the waiting time at the mill to unload harvested sugarcane. Factors incorporated into this model included farm size, daily mill quota, distance from farm to mill, and hours of mill unloading operations. Linear programming results identified optimal harvest schedules for farms of different sizes and at various distances from the mill. Harvest schedules for all farms

delivering to a common mill must be coordinated to minimize mill unloading time given the substantial volume of sugarcane going through raw sugar mills in a restricted harvest season window.

Table 1. Projected breakeven selling prices for raw sugar for selected yield levels, Arrangements, harvest through third stubble, tenant-operators, Louisiana, 2007

	Selected Yield Levels				
	-20%	-10%	Base	+10%	+20%
Cane yield per harvested acre ¹ (tons)	27.9	31.4	34.9	38.4	41.9
Sugar yield per harvested acre ² (lbs)	5,863	6,596	7,329	8,062	8,795
Sugar yield per rotational (farm) ³ acre ³	4,470	5,029	5,587	6,146	6,705
One-Fifth Land Share Rent:					
	-----cents per pound of sugar-----				
Breakeven price to recover ⁴ :					
Direct costs	18.7	17.0	15.7	14.6	13.7
Total specified costs	24.5	22.2	20.3	18.8	17.5
Total costs plus overhead	25.9	23.4	21.4	19.8	18.4
One-Sixth Land Share Rent:					
	-----cents per pound of sugar-----				
Breakeven price to recover ⁴ :					
Direct costs	18.0	16.4	15.1	14.0	13.1
Total specified costs	23.5	21.3	19.5	18.0	16.8
Total costs plus overhead	24.9	22.5	20.6	19.0	17.7

¹ Average farm yield across harvested acreage of plantcane, 1st stubble, 2nd stubble, and 3rd stubble (base yield of 36 tons plantcane, 37 tons 1st stubble, 34 tons 2nd stubble, 33 tons 3rd stubble).

² Average yield in tons per acre multiplied by a 200 CRS.

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

⁴ Breakeven prices are calculated by dividing grower's share of production into direct costs, total specified costs, and total specified costs plus overhead. No adjustment is made for molasses payments, hauling rebate, or other adjustments.

Table 2. Projected breakeven raw sugar yields for selected raw sugar price levels, harvest through third stubble, tenant-operators, Louisiana, 2007

	Selected Raw Sugar Price Levels				
	-1.0	-0.5	Base	+0.5	+1.0
Raw sugar price (cents per pound)	19.5	20.0	20.5	21.0	21.5
One-Fifth Land Share Rent:					
	-----pounds of sugar per harv. acre-----				
Breakeven yield to recover:					
Direct costs	5,622	5,482	5,348	5,221	5,099
Total specified costs	7,282	7,100	6,926	6,762	6,604
Total costs plus overhead	7,676	7,484	7,302	7,128	6,962
One-Sixth Land Share Rent:					
	-----pounds of sugar per harv. acre-----				
Breakeven yield to recover:					
Direct costs	5,401	5,266	5,137	5,015	4,898
Total specified costs	6,995	6,820	6,654	6,495	6,344
Total costs plus overhead	7,374	7,190	7,014	6,847	6,688