

# 2023 Projected Sugarcane Production Farm Costs and Returns Model

A Farm Planning/Decision Tool for Louisiana Sugarcane Growers



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The 2023 Projected Sugarcane Farm Costs and Returns Model was developed to assist sugarcane producers in planning for the 2023 crop year. The model is an Excel spreadsheet which allows sugarcane producers to enter projected sugarcane acreage of plant cane, first stubble, second stubble, and third stubble; associated projected yield levels per acre (tons); raw sugar and molasses price for the new crop year; and production cost data for 2023 to estimate net returns above variable and total production costs and to easily evaluate the impact of changing sugarcane yields, input prices, and input application rates on net returns per acre. The primary purpose of this model is to serve as a producer farm planning and decision tool to project and evaluate the impact on net returns above variable and total production costs from sugarcane production for the 2023 crop year. Calculations for the weighted average of yield, mill share, and land rent are provided within the model so that producers can examine an overall average economic performance for the farm.

The model also includes entry cells for whole farm fixed expenses to estimate projected net returns above all sugarcane farm production costs. This model can be used in conjunction with the *2023 Projected Sugarcane Costs and Returns* published by the LSU Agricultural Center. Both serve as farm management tools that allow producers to document their management strategies and production goals by providing a detailed economic analysis of how those strategies can be better managed to increase farm profitability.

## **Worksheet # 1: Projected Sugarcane Farm Costs and Returns Model Index**

Worksheet page one of this Excel model serves as an index or table of contents to identify the production, income and expense worksheet pages included in the model. Pages within model allow for entry of sugarcane production expenses for fallow land, purchases seed cane, farm propagated seed cane, planting operations (hand, mechanical, wholestalk, billet), field operations for plant cane and stubble cane, and harvest operations (billet or wholestalk). Titles on expense worksheet tables match those used in the *2023 Projected Sugarcane Costs and Returns* published by the LSU Agricultural Center A.E.I.R.S. Publication No. 362 which is available via the LSU Agricultural Center or via the internet at:

[http://www.lsuagcenter.com/en/crops\\_livestock/crops/sugarcane/economics](http://www.lsuagcenter.com/en/crops_livestock/crops/sugarcane/economics)

Projected production cost estimates from the 2023 projected costs and returns report are already entered into the model. On each worksheet, the producer can change information, in cells that are highlighted in blue (blue text font), to more closely match an individual farm operation. Those production expense estimates, along with acreage values and yield projections, are then automatically incorporated into calculations of farm costs and returns for an instant determination of overall projected farm profitability (Worksheet # 2) and breakeven production and price values (Worksheet # 3).

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2024 Crop Year



| Worksheet Page | Title / Information   |
|----------------|---|
| 1              | <b>Index</b>  |
| 2              | <b>Costs and Returns Summary</b>  |
| 3              | <b>Breakeven Analysis</b><br>Breakeven Raw Sugar Prices<br>Breakeven Sugarcane Yields<br>Breakeven Sugar Recovery Rates   |
| 4              | <b>Fallow &amp; Seed Cane</b><br>Fallow Expenses<br>Purchased Seed Cane Expenses<br>Wholestalk Seed Cane Harvest Expenses<br>Billet Seed Cane Harvest Expenses          |
| 5              | <b>Planting Operations</b><br>Hand Planting - 1-Row Wholestalk<br>Mechanical Planting - 1-Row Wholestalk<br>Mechanical Planting - 1-Row Billet                          |
| 6              | <b>Field Operations</b><br>Plant Cane Field Operations<br>First Stubble Field Operations<br>Second Stubble Field Operations<br>Third Stubble and Older Field Operations |
| 7              | <b>Harvest Operations</b><br>Harvest Expenses - 1-Row Combine Harvester<br>Harvest Expenses - 2-Row Wholestalk Harvester  |
| 8              | <b>Weighted Average Mill Share Calculator</b>   |
| 9              | <b>Weighted Average Yield Calculator</b>  |
| 10             | <b>Weighted Average Land Crop Share Calculator</b>  |

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**Worksheet # 2: Projected Whole Farm Sugarcane Costs and Returns Summary**

Information regarding the total number of farm acres (E5), total numbers of acres harvested for sugar (E6), the projected raw sugar price per pound (E7), and projected molasses price per gallon (E8) are entered into the model by the producer. The producer then will enter information used to calculate the gross value of production, which is the yield in tons per acre for plant cane (D14), first stubble (D15), second stubble (D16), third stubble (D17), and older stubble cane harvested (D18). The sugar per acre is based off an average CRS of 210 (E14 to E18). This CRS value can be changed for each category of sugarcane crop (plant cane and stubble cane). The dollar per acre value is then multiplied by the number of acres of cane in each growth stage, entered by the producer (I14 to I18). Molasses is calculated by assuming that three gallons of molasses can be produced with every 100 pounds of sugar harvested (F22). Hence, molasses is calculated from the total pounds of sugarcane harvested as entered into the model by the producer. Mill charges for sugar (F31) and molasses (F32) along with land rent (F38 and F39) is calculated by the producer entering the percent of the crop paid for each. Net returns available to the producers are then achieved.

This model also allows a producer to enter income from other activities on-farm, such income from other crops or custom work performed, etc. in order to estimate producer income (K47 to K49). Variable production expenses are then calculated from the projected expense totals from sheets 4, 5, 6, and 7. The producer must specify the number of acres (I53 to I68) of which that activity occurs. From this information, net returns above variable production expenses to the producer are calculated. Given the variability of machinery age and purchase price, fixed costs (K73) are estimated over all field operations and entered into the whole farm cash flow statement. The last row of the statement contains the net returns above total production expenses to the producer in a total dollar value, a per-acre value, and a per-pound of sugar value.

**Projected Whole Farm Sugarcane Costs and Returns for the 2023 Crop Year**

|                                 |         |         |        |        |          |           |
|---------------------------------|---------|---------|--------|--------|----------|-----------|
| Total Farm Acres                | 1,000.0 | Dollars | Number | Total  | Dollar   | Value     |
| Total Acres Harvested for Sugar | 760.6   | Per     | of     | Dollar | Value    | Per Pound |
| Raw Sugar Price per Pound       | \$0.320 | Acres   | Acres  | Value  | Per Acre | of Sugar  |
| Molasses Price per Gallon       | \$0.79  |         |        |        |          |           |

**Total Sugarcane Production (tons) = 25,784**  
**Total Raw Sugar Production (lbs) = 5,981,888** (\$/acre) (acre) (\$) (\$/acre) (\$/lb of sugar)

**Gross Value of Production:**

|   |           |           |            |          |       |                    |                   |                |
|---|-----------|-----------|------------|----------|-------|--------------------|-------------------|----------------|
| <b>Sugar:</b>                                 | tons/acre | sugar/ton | sugar/acre |          |       |                    |                   |                |
| Plant Cane                                    | 40.0      | 232       | 9,280      | 2,969.60 | 160.6 | 476,048            | 476.92            | 0.320          |
| 1st Stubble                                   | 37.2      | 232       | 8,630      | 2,761.73 | 200.0 | 552,346            | 552.35            | 0.320          |
| 2nd Stubble                                   | 30.8      | 232       | 7,146      | 2,286.59 | 200.0 | 457,318            | 457.32            | 0.320          |
| 3rd Stubble                                   | 28.8      | 232       | 6,682      | 2,138.11 | 200.0 | 427,622            | 427.62            | 0.320          |
| Older Stubble                                 | 0.0       | 0         | 0          | 0.00     | 0.0   | 0                  | 0.00              | 0.000          |
|   |           |           |            |          | 760.6 |                    |                   |                |
| <b>Total Market Value of Sugar Production</b> |           |           |            |          |       | <b>\$1,914,204</b> | <b>\$1,914.20</b> | <b>\$0.320</b> |

**Molasses:** Gal. Mol./Cwt. Sugar 3.0  
 Gallons of Molasses 179,457 -- -- \$141,771 \$141.77 \$0.024

Weighted average (tons) calculated from Worksheet # 8

**Total Market Value of Sugar & Molasses \$2,055,975 \$2,055.97 \$0.344**

|                          |                |         |        |        |          |           |
|--------------------------|----------------|---------|--------|--------|----------|-----------|
| <b>Mill Charge</b>       |                | Dollars | Number | Total  | Dollar   | Value     |
| Sugar                    | Cane Share     | Per     | of     | Dollar | Value    | Per Pound |
| Molasses                 | Molasses Share | Acres   | Acres  | Value  | Per Acre | of Sugar  |
| <b>Total Mill Charge</b> |                |         |        |        |          |           |

Weighted mill charge from Worksheet # 9

**Net Returns to Land and Producer \$1,238,550 \$1,238.55 \$0.207**

|                                 |                |  |  |  |  |  |
|---------------------------------|----------------|--|--|--|--|--|
| <b>Land Share (Share Basis)</b> |                |  |  |  |  |  |
| Sugar                           | Cane Share     |  |  |  |  |  |
| Molasses                        | Molasses Share |  |  |  |  |  |
| <b>Total Land Charge</b>        |                |  |  |  |  |  |

Weighted land rent across all tracts from Worksheet #10

**Net Returns to Producer \$1,031,712 \$1,031.71 \$0.172**

|                              |  |  |  |                    |                   |                |
|------------------------------|--|--|--|--------------------|-------------------|----------------|
| <b>Producer Income</b>       |  |  |  |                    |                   |                |
| Sugar and Molasses           |  |  |  | 1,031,712          | 1031.71           | 0.172          |
| Other Income                 |  |  |  | 0                  |                   |                |
| Other Income                 |  |  |  | 0                  |                   |                |
| Other Income                 |  |  |  | 0                  |                   |                |
| <b>Total Producer Income</b> |  |  |  | <b>\$1,031,712</b> | <b>\$1,031.71</b> | <b>\$0.172</b> |

Variable production expenses per field activity from Worksheets # 4 to # 7

**Variable Production Expenses:**

|   |          |       |                  |
|---|----------|-------|------------------|
| Fallow Field & Seedbed Preparation Operations | \$200.53 | 200.0 | 40,106           |
| Cultured Seed Cane                            | \$741.01 | 3.3   | 2,445            |
| Hand Planting Seed Cane                       | \$272.68 | 3.3   | 900              |
| Harvesting Wholestalk Seed Cane               | \$112.31 | 39.4  | 4,425            |
| Harvesting Billet Seed Cane                   | \$159.84 | 0.0   | 0                |
| Mechanical Planting Wholestalk Seed Cane      | \$234.43 | 196.7 | 46,112           |
| Mechanical Planting BilletSeed Cane           | \$207.83 | 0.0   | 0                |
| Plant Cane Field Operations                   | \$370.44 | 200.0 | 74,088           |
| 1st Stubble Field Operations                  | \$441.88 | 200.0 | 88,376           |
| 2nd Stubble Field Operations                  | \$418.68 | 200.0 | 83,736           |
| 3rd Stubble Field Operations                  | \$418.68 | 200.0 | 83,736           |
| Older Stubble Field Operations                | \$418.68 | 0.0   | 0                |
| Combine Harvest for Sugar                     | \$253.54 | 760.6 | 192,843          |
| Wholestalk Harvest for Sugar                  | \$162.94 | 0.0   | 0                |
| Other Expenses                                | \$0.00   | 0.0   | 0                |
| Other Expenses                                | \$0.00   | 0.0   | 0                |
| <b>Total Variable Production Expenses</b>     |          |       | <b>\$616,767</b> |

Total from Worksheet below

**Net Returns Above Variable Production Expenses \$414,945 \$414.94 \$0.069**

**Fixed Expenses (total from table below) \$156,409 \$156.41 \$0.026**

**Net Returns Above Total Production Expenses \$258,536 \$258.54 \$0.043**

### Worksheet # 3: Breakeven Analysis

The breakeven price analysis requires that a producer only enter the mill share and land rent percentages. Breakeven analysis is for three values: (1) breakeven raw sugar price, (2) breakeven sugarcane yield (tons/acre), and (3) breakeven sugar recovery (pounds per ton). By entering in the 2023 sugar price per pound, the model allows a producer to observe how their breakeven point change with a 5 or 10 percent change in the amount of tons harvested per acre for plant cane, first stubble, second stubble, etc. These tables can help answer such questions as: *What is the new breakeven ton per harvested acre are required with a 5 to 10 percentage change in price?* and *Given a 5 to 10 percentage change in price, how much sugar per ton of cane must recovered to breakeven against total costs?* The breakeven points are calculated to cover total variable production expenses and total specified production expenses.

| Breakeven Raw Sugar Prices for 2023                                |       |                                     |                         |       |       |
|--|-------|-------------------------------------|-------------------------|-------|-------|
| Mill Share   | 39.0% | Average sugar per ton CRS (lbs/ton) | 232                     |       |       |
| Land Share   | 16.7% | <b>Selected Yield Levels</b>        |                         |       |       |
| Grower Share   | 50.8% |                                     |                         |       |       |
|  |       |                                     | Projected<br>2023 Yield |       |       |
|  |       | - 10%                               | - 5%                    | + 5%  | + 10% |
| Cane yield per harvested acre (tons)                               |       | 30.5                                | 32.2                    | 33.9  | 35.6  |
| Cane yield per total farm acre (tons)                              |       | 23.2                                | 24.5                    | 25.8  | 27.1  |
| Sugar yield per harvested acre (lbs)                               |       | 7,078                               | 7,471                   | 7,865 | 8,258 |
| Sugar yield per total farm acre (lbs)                              |       | 5,384                               | 5,683                   | 5,982 | 6,281 |
| -----cents per lb.-----  |       |                                     |                         |       |       |
| <b>Breakeven Raw Sugar Price to Recover: 1/</b>                    |       |                                     |                         |       |       |
| Variable (Direct) Production Expenses                              |       | 22.55                               | 21.36                   | 20.29 | 19.32 |
| Total Production Expenses  |       | 28.26                               | 26.78                   | 25.44 | 24.23 |
| 1/ Estimation of breakeven sugar prices excludes molasses payment. |       |                                     |                         |       |       |

| Breakeven Sugarcane Yields (Tons/ Acre) for 2023                   |       |  |                         |         |         |
|--|-------|--|-------------------------|---------|---------|
| Mill Share   | 39.0% | Average sugar per ton CRS (lbs/ton)    | 232                     |         |         |
| Land Share   | 16.7% | <b>Selected Raw Sugar Price Levels</b> |                         |         |         |
| Grower Share   | 50.8% |  |                         |         |         |
|  |       |  | Projected<br>2023 Price |         |         |
|  |       | - 10%                                  | - 5%                    | + 5%    | + 10%   |
| Raw sugar price (\$/pound)   |       | \$0.288                                | \$0.304                 | \$0.320 | \$0.336 |
| -----tons per total farm acre-----                                 |       |  |                         |         |         |
| <b>Breakeven Yield/Total Farm Acre to Recover: 1/</b>              |       |  |                         |         |         |
| Variable (Direct) Production Expenses                              |       | 18.2                                   | 17.2                    | 16.3    | 15.6    |
| Total Production Expenses  |       | 22.8                                   | 21.6                    | 20.5    | 19.5    |
| -----tons per harvested acre-----                                  |       |  |                         |         |         |
| <b>Breakeven Yield/Harvested Acre to Recover: 1/</b>               |       |  |                         |         |         |
| Variable (Direct) Production Expenses                              |       | 23.9                                   | 22.6                    | 21.5    | 20.5    |
| Total Production Expenses  |       | 29.9                                   | 28.4                    | 26.9    | 25.7    |
| 1/ Estimation of breakeven sugar prices excludes molasses payment. |       |  |                         |         |         |

| Breakeven Sugar Recovery (CRS) for 2023                            |       |                                       |                         |         |         |
|--|-------|---------------------------------------|-------------------------|---------|---------|
| Mill Share   | 39.0% | Cane yield per harvested acre (tons)  | 33.9                    |         |         |
| Land Share   | 16.7% | Cane yield per total farm acre (tons) | 25.8                    |         |         |
| Grower Share   | 50.8% | <b>Selected Yield Levels</b>          |                         |         |         |
|  |       |                                       |                         |         |         |
|  |       |                                       | Projected<br>2023 Price |         |         |
|  |       | - 10%                                 | - 5%                    | + 5%    | + 10%   |
| Raw sugar price (\$/pound)   |       | \$0.288                               | \$0.304                 | \$0.320 | \$0.336 |
| -----pounds of sugar per ton of cane-----                          |       |                                       |                         |         |         |
| <b>Breakeven Sugar Recovery (CRS) to Recover: 1/</b>               |       |                                       |                         |         |         |
| Variable (Direct) Production Expenses                              |       | 163                                   | 155                     | 147     | 140     |
| Total Production Expenses  |       | 205                                   | 194                     | 184     | 176     |
| 1/ Estimation of breakeven sugar prices excludes molasses payment. |       |                                       |                         |         |         |

**Worksheet # 4: Fallow and Seed Cane Activities**

This section of the model allows a producer to enter cost data on herbicides (H6), labor (H7), fuel (F8 and G8), repair and maintenance (H9), consultant/service fees (H10), interest on capital (H14), as well as other “custom” farm operations that figure into fallow field activated (H11 to H13). These projected expenses are totaled (H15) and calculated into breakeven and cash flow analysis sections of the model. Data also included on this worksheet page are costs for purchasing cultured seed cane and harvesting farm propagated seed cane. Throughout this model fuel price and varying consumption rates, allows a producer to examine the effects per gallon price as to determine its overall effect on the farm’s cost structure and profitability.

| <b>Fallow Expenses (including plowing old stubble, seedbed prep)</b> |             |              |                 |                 |
|--|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>  | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Herbicides   | acre        |              |                 | 37.50           |
| Labor  | acre        |              |                 | 31.86           |
| Fuel   | gal         | \$4.00       | 20.74           | 82.96           |
| Repair & Maintenance   | acre        |              |                 | 24.45           |
| Service Fees   | acre        |              |                 | 9.00            |
| Digital Ag Service Fee   | acre        |              |                 | 10.00           |
| Other  | acre        |              |                 | 0.00            |
| Other  | acre        |              |                 | 0.00            |
| Interest on Oper. Capital  | acre        |              |                 | 4.74            |
| <b>Projected Fallow Expenses</b>                                     |             |              |                 | <b>\$200.51</b> |

Table 4, page 10 in 2023 Projected Sugarcane Costs and Returns

| <b>Purchased Cultured Seed Cane</b>           |             |              |                 |                 |
|---|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>                           | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Purchased seed cane                           | acre        |              |                 | 665.00          |
| Labor   | acre        |              |                 | 4.52            |
| Fuel  | gal         | \$4.00       | 2.10            | 8.41            |
| Repair & Maintenance                          | acre        |              |                 | 8.51            |
| Digital Ag Service Fee                        | acre        |              |                 | 10.00           |
| Other   | acre        |              |                 | 0.00            |
| Other   | acre        |              |                 | 0.00            |
| Interest on Oper. Capital                     | acre        |              |                 | 44.57           |
| <b>Projected Purchased Seed Cane Expenses</b> |             |              |                 | <b>\$741.01</b> |

Table 5, page 11 in 2023 Projected Sugarcane Costs and Returns

| <b>Wholestalk Seed Cane Harvest</b>                    |             |              |                 |                 |
|--|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>                                    | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Labor  | acre        |              |                 | 20.19           |
| Fuel   | gal         | \$4.00       | 10.90           | 43.60           |
| Repair & Maintenance                                   | acre        |              |                 | 31.77           |
| Digital Ag Service Fee                                 | acre        |              |                 | 10.00           |
| Other  | acre        |              |                 | 0.00            |
| Other  | acre        |              |                 | 0.00            |
| Interest on Oper. Capital                              | acre        |              |                 | 6.76            |
| <b>Projected Wholestalk Seed Cane Harvest Expenses</b> |             |              |                 | <b>\$112.32</b> |

Table 6, page 12 in 2023 Projected Sugarcane Costs and Returns

| <b>Billet Seed Cane Harvest</b>                    |             |              |                 |                 |
|--|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>                                | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Labor  | acre        |              |                 | 22.85           |
| Fuel   | gal         | \$4.00       | 15.16           | 60.64           |
| Repair & Maintenance                               | acre        |              |                 | 56.69           |
| Digital Ag Service Fee                             | acre        |              |                 | 10.00           |
| Other  | acre        |              |                 | 0.00            |
| Other  | acre        |              |                 | 0.00            |
| Interest on Oper. Capital                          | acre        |              |                 | 9.62            |
| <b>Projected Billet Seed Cane Harvest Expenses</b> |             |              |                 | <b>\$159.80</b> |

Total variable expenses per acre are automatically transferred to the whole farm cost and returns summary on worksheet #2.

## Worksheet # 5: Planting Operations

Planting information requires a larger appropriation of the operating expense compared to the fallow field and seed cane activities. Fertilizer input prices (F6 to F9) and application rates (G6 to G9), special planting labor wages (F11 and G11), and fuel (F13 and G13) can be tailored to reflect hand or mechanical methods of plating the wholestalk or billet cane. These inputs combined with herbicide (H10), repair and maintenance (H14), interest on capital (H18), and "other" cost categories (H15 to H17) are totaled (H19) and used for further economic analysis.

| <b>Hand Planting, 1-Row Wholestalk</b>             |             |              |                 |                 |
|--|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>                                | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Fertilizer - Nitrogen                              | lbs of N    | \$0.78       | 0               | 0.00            |
| Fertilizer - Phosphorus                            | lbs of P    | \$0.90       | 0               | 0.00            |
| Fertilizer - Potassium                             | lbs of K    | \$0.67       | 0               | 0.00            |
| Fertilizer - Other                                 | lbs         |              |                 | 0.00            |
| Herbicides   | acre        |              |                 | 58.78           |
| Special Planting Labor                             | acre        | \$25.00      | 3               | 75.00           |
| Labor  | acre        |              |                 | 27.12           |
| Fuel   | gal         | \$4.00       | 17.98           | 71.92           |
| Repair & Maintenance                               | acre        |              |                 | 27.17           |
| Digital Ag Service Fee                             | acre        |              |                 | 10.00           |
| Other  | acre        |              |                 | 0.00            |
| Other  | acre        |              |                 | 0.00            |
| Interest on Oper. Capital                          | acre        |              |                 | 2.46            |
| <b>Projected Wholestalk Hand Planting Expenses</b> |             |              |                 | <b>\$272.45</b> |

Table 8, page 14 in 2023 Projected Sugarcane Costs and Returns

| <b>Mechanical Planting, 1-Row Wholestalk</b>             |             |              |                 |                 |
|--|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>                                      | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Fertilizer - Nitrogen                                    | lbs of N    | \$0.78       | 0               | 0.00            |
| Fertilizer - Phosphorus                                  | lbs of P    | \$0.90       | 0               | 0.00            |
| Fertilizer - Potassium                                   | lbs of K    | \$0.67       | 0               | 0.00            |
| Fertilizer - Other                                       | lbs         |              |                 | 0.00            |
| Herbicides   | acre        |              |                 | 58.78           |
| Special Planting Labor                                   | acre        | \$25.00      | 2               | 50.00           |
| Labor  | acre        |              |                 | 22.61           |
| Fuel   | gal         | \$4.00       | 14.75           | 59.00           |
| Repair & Maintenance                                     | acre        |              |                 | 20.19           |
| Digital Ag Service Fee                                   | acre        |              |                 | 10.00           |
| Other  | acre        |              |                 | 0.00            |
| Other  | acre        |              |                 | 0.00            |
| Interest on Oper. Capital                                | acre        |              |                 | 13.61           |
| <b>Projected Wholestalk Mechanical Planting Expenses</b> |             |              |                 | <b>\$234.19</b> |

Table 9, page 15 in 2023 Projected Sugarcane Costs and Returns

| <b>Mechanical Planting, 1-Row Billet</b>             |             |              |                 |                 |
|--|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>                                  | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Fertilizer - Nitrogen                                | lbs of N    | \$0.78       | 0               | 0.00            |
| Fertilizer - Phosphorus                              | lbs of P    | \$0.90       | 0               | 0.00            |
| Fertilizer - Potassium                               | lbs of K    | \$0.67       | 0               | 0.00            |
| Fertilizer - Other                                   | lbs         |              |                 | 0.00            |
| Herbicides   | acre        |              |                 | 58.78           |
| Special Planting Labor                               | acre        | \$25.00      | 1               | 25.00           |
| Labor  | acre        |              |                 | 22.61           |
| Fuel   | gal         | \$4.00       | 14.75           | 59.00           |
| Repair & Maintenance                                 | acre        |              |                 | 20.19           |
| Digital Ag Service Fee                               | acre        |              |                 | 10.00           |
| Other  | acre        |              |                 | 0.00            |
| Other  | acre        |              |                 | 0.00            |
| Interest on Oper. Capital                            | acre        |              |                 | 12.01           |
| <b>Projected Billet Mechanical Planting Expenses</b> |             |              |                 | <b>\$207.59</b> |

Total variable expenses per acre are automatically transferred to the whole farm cost and returns summary on worksheet #2.

### Worksheet # 6: Field Operations

Field operations command the largest share of sugarcane production expenses on a per acre basis. Similar to fallow and planting operations in-field, fertilizer prices and application rate (F6 to F10 and G6 to G10), and fuel consumption rates (F15 and G15) can be customized to reflect on-farm production strategies. General cost categories such as herbicides (H11), insecticides (H12), service fees (H13), labor (H14), repair and maintenance (H16), "other" field expenses (H17 to H19), and interest on capital (H20) are also present for data input. The total variable cost per acre (H21) is totaled for plant cane operations, first stubble operations, and second stubble and older operations. These values are referenced throughout the whole farm costs and returns table as well as the breakeven analysis.

| Plant Cane Cultivation and Field Operations      |          |        |          |                 |
|--|----------|--------|----------|-----------------|
| Expense Item                                     | Unit     | Price  | Quantity | Cost            |
| Custom Aerial Appl.                              | appl.    | \$9.00 | 1        | 9.00            |
| Fertilizer - Nitrogen                            | lbs of N | \$0.78 | 80       | 62.40           |
| Fertilizer - Phosphorus                          | lbs of P | \$0.90 | 0        | 0.00            |
| Fertilizer - Potassium                           | lbs of K | \$0.67 | 80       | 53.60           |
| Fertilizer - Sulfur                              | lbs      | \$0.34 | 24.00    | 8.16            |
| Herbicides                                       | acre     |        |          | 117.42          |
| Insecticides                                     | acre     |        |          | 17.44           |
| Service Fees                                     | acre     |        |          | 9.00            |
| Labor  | acre     |        |          | 16.14           |
| Fuel   | gal      | \$4.00 | 8.91     | 35.64           |
| Repair & Maintenance                             | acre     |        |          | 9.96            |
| Surfactant                                       | acre     |        |          | 9.90            |
| Digital Ag Service Fee                           | acre     |        |          | 10.00           |
| Other  | acre     |        |          | 0.00            |
| Interest on Oper. Capital                        | acre     |        |          | 11.72           |
| <b>Projected Plant Cane Cultivation Expenses</b> |          |        |          | <b>\$370.38</b> |

Table 11, pages 17-18 in 2023 Projected Sugarcane Costs and Returns

| First Stubble Cultivation and Field Operations      |          |        |          |                 |
|---|----------|--------|----------|-----------------|
| Expense Item  | Unit     | Price  | Quantity | Cost            |
| Custom Aerial Appl.                                 | appl.    | \$9.00 | 2        | 18.00           |
| Fertilizer - Nitrogen                               | lbs of N | \$0.78 | 100      | 78.00           |
| Fertilizer - Phosphorus                             | lbs of P | \$0.90 | 40       | 36.00           |
| Fertilizer - Potassium                              | lbs of K | \$0.67 | 100      | 67.00           |
| Fertilizer - Sulfur                                 | lbs      | \$0.34 | 24.00    | 8.16            |
| Herbicides  | acre     |        |          | 112.73          |
| Insecticides  | acre     |        |          | 17.44           |
| Ripener   | acre     |        |          | 0.00            |
| Service Fees  | acre     |        |          | 9.00            |
| Labor   | acre     |        |          | 16.48           |
| Fuel  | gal      | \$4.00 | 9.08     | 36.32           |
| Repair & Maintenance                                | acre     |        |          | 10.44           |
| Surfactant  | acre     |        |          | 8.40            |
| Digital Ag Service Fee                              | acre     |        |          | 10.00           |
| Other   | acre     |        |          | 0.00            |
| Interest on Oper. Capital                           | acre     |        |          | 13.38           |
| <b>Projected First Stubble Cultivation Expenses</b> |          |        |          | <b>\$441.87</b> |

Table 12, pages 19-20 in 2023 Projected Sugarcane Costs and Returns

| Second Stubble Cultivation and Field Operations |          |        |          |       |
|---|----------|--------|----------|-------|
| Expense Item                                    | Unit     | Price  | Quantity | Cost  |
| Custom Aerial Appl.                             | appl.    | \$9.00 | 2        | 18.00 |
| Fertilizer - Nitrogen                           | lbs of N | \$0.78 | 110      | 85.80 |
| Fertilizer - Phosphorus                         | lbs of P | \$0.90 | 40       | 36.00 |
| Fertilizer - Potassium                          | lbs of K | \$0.67 | 100      | 67.00 |
| Fertilizer - Sulfur                             | lbs      | \$0.34 | 24       | 8.16  |
| Herbicides                                      | acre     |        |          | 86.21 |
| Insecticides                                    | acre     |        |          | 17.44 |

Total variable expenses per acre are automatically transferred to the whole farm cost and returns summary on worksheet #2.

## Worksheet # 7: Harvest Operations

There are two harvest methods presented in this section, a one-row combine harvester, and a two-row wholestalk harvester unit. Fuel price and consumption rates (F7 to F8 and G7 to G8) can be tailed to reflect tractor and combine efficiency and performance rates per acre. Data for labor (H6), repair and maintenance (H9), "other" expenses (H10 to H12), and interest on capital (H13) can also be entered. The total variable cost per acre to harvest the sugarcane (H14) is included in the whole farm costs and returns summary as well as the breakeven analysis.

| <b>Harvest - 1-Row Combine Harvester</b>  |             |              |                 |                 |
|---|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>                       | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Labor                                     | acre        |              |                 | 40.89           |
| Fuel - Tractors                           | gal         | \$4.00       | 19.70           | 78.80           |
| Fuel - Combine Harvester                  | gal         | \$4.00       | 8.40            | 33.60           |
| Repair & Maintenance                      | acre        |              |                 | 76.29           |
| Digital Ag Service Fee                    | acre        |              |                 | 10.00           |
| Other                                     | acre        |              |                 | 0.00            |
| Other                                     | acre        |              |                 | 0.00            |
| Interest on Oper. Capital                 | acre        |              |                 | 14.06           |
| <b>Projected Combine Harvest Expenses</b> |             |              |                 | <b>\$253.64</b> |

Table 14, page 23 in 2023 Projected Sugarcane Costs and Returns

| <b>Harvest - 2-Row Wholestalk Harvester</b>  |             |              |                 |                 |
|--|-------------|--------------|-----------------|-----------------|
| <b>Expense Item</b>                          | <b>Unit</b> | <b>Price</b> | <b>Quantity</b> | <b>Cost</b>     |
| Labor  | acre        |              |                 | 32.43           |
| Fuel - Tractors                              | gal         | \$4.00       | 11.33           | 45.32           |
| Fuel - Wholestalk Harvester                  | gal         | \$4.00       | 6.38            | 25.52           |
| Repair & Maintenance                         | acre        |              |                 | 40.58           |
| Digital Ag Service Fee                       | acre        |              |                 | 10.00           |
| Other  | acre        |              |                 | 0.00            |
| Other  | acre        |              |                 | 0.00            |
| Interest on Oper. Capital                    | acre        |              |                 | 9.64            |
| <b>Projected Wholestalk Harvest Expenses</b> |             |              |                 | <b>\$162.89</b> |

Total variable expenses per acre are automatically transferred to the whole farm cost and returns summary on worksheet #2.

## Worksheet # 8: Calculating Weighted Averages for Mill Share

Each sugar mill that the producer ships sugarcane to can be identified by the total number of tons hauled (F6) and the mill's share of the sugar returns (H6), expressed as a percentage. A weighted average (H11) is then calculated based on the same principle as the previous sheet.

| <b>Weighted Average Mill Share for Total Tons of Sugarcane Hauled</b>   |                    |                   |
|---|--------------------|-------------------|
| <b>Mill Name</b>  | <b>Tons Hauled</b> | <b>Mill Share</b> |
| 1 Mill A  | 5,000.0            | 38.0%             |
| 2 Mill B  | 5,000.0            | 40.0%             |
| 3 Mill C  | 20,000.0           | 39.0%             |
| 4   |                    |                   |
| 5   |                    |                   |
| <b>Weighted Average Mill Share for Total Tons of Sugarcane Hauled =</b> |                    | <b>39.0%</b>      |



**Worksheet # 9: Calculating Weighted Averages for Plant Cane and Stubble crops (per tract per acre)**

A sugarcane producer can enter the tract acreage (F6 to F30), ton per acre yield (H6 to H30), and sugar per ton (J6 to J30) of up to 25 individual tracts of land currently in production (C6 to C30). The model calculates a weighted average for each of the aforementioned categories from the imputed data across the entire farming operation. This table is duplicated so that a producer can enter the same type of data for first, second, third, and older stubble crops by tract. The weighted averages for tons per acre (H31), CRS (L33), and sugar per ton (J32) can then be entered into the cells in the Cost and Returns summary worksheet (Sheet # 2).

| Weighted Average Plant Cane Tonnage and Sugar Yields per Harvested Acre    |       |           |           |            |
|--|-------|-----------|-----------|------------|
| Tract Name   | Acres | Tons/Acre | Sugar/Ton | Sugar/Acre |
| 1 Tract PC - 1   | 10.0  | 37.0      | 223       | 8,251      |
| 2 Tract PC - 2   | 10.0  | 35.0      | 217       | 7,595      |
| 3 Tract PC - 3   | 20.0  | 36.0      | 220       | 7,920      |
| 4  |       |           |           | 0          |
| 5  |       |           |           | 0          |
| 6  |       |           |           | 0          |
| 7  |       |           |           | 0          |
| 8  |       |           |           | 0          |
| 9  |       |           |           | 0          |
| 10   |       |           |           | 0          |
| 11   |       |           |           | 0          |
| 12   |       |           |           | 0          |
| 13   |       |           |           | 0          |
| 14   |       |           |           | 0          |
| 15   |       |           |           | 0          |
| 16   |       |           |           | 0          |
| 17   |       |           |           | 0          |
| 18   |       |           |           | 0          |
| 19   |       |           |           | 0          |
| 20   |       |           |           | 0          |
| 21   |       |           |           | 0          |
| 22   |       |           |           | 0          |
| 23   |       |           |           | 0          |
| 24   |       |           |           | 0          |
| 25   |       |           |           | 0          |
| Weighted Average Plant Cane Harvested Yield (Tons/Harv. Acre) =            |       | 36.0      |           |            |
| Weighted Average Plant Cane Sugar per Ton (Pounds/Ton) =                   |       |           | 220.0     |            |
| Weighted Average Plant Cane Sugar per Harvested Acre (Pounds/Harv. Acre) = |       |           |           | 7,922      |

| Weighted Average First Stubble Tonnage and Sugar Yields per Harvested Acre |       |           |           |            |
|--|-------|-----------|-----------|------------|
| Tract Name   | Acres | Tons/Acre | Sugar/Ton | Sugar/Acre |
| 1 Tract FS - 1   | 10.0  | 38.0      | 223       | 8,474      |
| 2 Tract FS - 2   | 10.0  | 36.0      | 217       | 7,812      |
| 3 Tract FS - 3   | 20.0  | 37.0      | 220       | 8,140      |
| 4  |       |           |           | 0          |
| 5  |       |           |           | 0          |
| 6  |       |           |           | 0          |

**Worksheet # 10: Calculating Weighted Average for Land Rents**

The weighted average for land rent (H36) for up to 30 landlords (C6 to C35) is identified by the amount of acres that the producer rents (F6 to F35) and the corresponding crop share paid to that particular landlord (H6 to H35).

| Weighted Average Land Rent Crop Share   |              |            |
|---|--------------|------------|
| Landlord                                | Acres Rented | Crop Share |
| 1 Landlord 1                            | 250.0        | 16.7%      |
| 2 Landlord 2                            | 250.0        | 16.7%      |
| 3 Landlord 3                            | 500.0        | 20.0%      |
| 4                                       |              |            |
| 5                                       |              |            |
| 6                                       |              |            |
| 7                                       |              |            |
| 8                                       |              |            |
| 9                                       |              |            |
| 10                                      |              |            |
| 11                                      |              |            |
| 12                                      |              |            |
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| 22                                      |              |            |
| 23                                      |              |            |
| 24                                      |              |            |
| 25                                      |              |            |
| 26                                      |              |            |
| 27                                      |              |            |
| 28                                      |              |            |
| 29                                      |              |            |
| 30                                      |              |            |
| Weighted Average Land Rent Crop Share = |              | 18.4%      |

**Ending Notes**

Information that is entered into this model is intended to serve as a planning tool/production cost estimator to allow the producer to (1) project whole farm costs and returns from sugarcane production, (2) to make adjustments to those projections as the production year progresses and (3) to examine the impact of changes in yields, input prices, and other factors have on the overall projected profitability of the entire farming operation. It can be applied to the sugarcane operation as a forward-planning tool and ongoing analysis method to account for units of input and amount of sugar produced per tract less mill and land charges.

Portions of the worksheet pages are protected to prevent changes or deletions of cells containing formulas. The protections on these cells or worksheet pages can be removed to allow more flexibility in the use of this decision tool. For example, tables could be added to allow entry of individual field data and computation of average values for specific items (e.g., herbicide costs on fallow fields). To unprotect any worksheet page, click on "Tools/Protection/Unprotect Sheet."



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