Sugarcane Crop Values, Crop Leases, & the Economic Impact of Burning

Michael E. Salassi
Department of Agricultural Economics and Agribusiness
Louisiana State University Agricultural Center
What Does the Term “Sugarcane Crop Value” Mean?

Possible Interpretations of “Value”:

- Production costs currently invested in the crop
- Expected market revenue of the crop (i.e., price x yield)
- Expected profit of the crop (i.e., revenue – costs)

Additional Questions on “Value”:

- Value to whom?
- Is “value” the same in all circumstances?
What are Some Problems with the Term “Value”?

Questions:

- **What do you mean by the term “value”?**

1) Are you just talking only about current year crop acres in the field?
2) Are you talking about total crop value or value to the grower?
3) What about mill and landlord shares?
4) What about succeeding years production through end of crop cycle?
5) What about the change of tenant within existing crop cycle?
6) What about the sale of land for development?
7) What about pipeline damage to portion of existing crop?
8) Does the current condition of the crop matter?
9) Would you use past prices, current prices or future expected prices?
10) What production costs, if any, would you include or exclude?
11) Do sugar yields matter and, if so, which ones would you use?
12) What about acreage used for seed cane?
Value of Standing Sugarcane Crop

1) **Sugarcane Production Continues with a New Producer**

   Current producer would receive from new producer:
   a) Unrecovered planting costs, up to that point in time
   b) Any current year production expenses, up to that point in time

2) **Sugarcane Production is Being Terminated**

   Current producer would receive:
   a) Net present value of future net returns above variable cultivation and harvest costs
      or
   b) Unrecovered planting cost, if higher

**Note:**
(1) The final price is a negotiated price between the buyer and seller.
(2) LSU AgCenter planting cost estimates assume recommended practices.
(3) Cropland lease language should be as specific as possible.
Allocated / Prorated Sugarcane Planting Costs

ALLOCATION OF LOUISIANA SUGARCANE PLANTING COSTS IN 2015 FOR SUGARCANE PLANTED IN 2014

Michael A. Deliberto and Michael E. Salasii
Department of Agricultural Economics & Agbusiness
Staff Report No. 2014-15

September 2014

Sugarcane in Louisiana is a perennial crop which provides for three or more years of harvest before being replanted. Planting costs associated with sugarcane are generally allocated over the years of harvest. This report provides estimates of allocated sugarcane planting costs applicable to the 2015 crop year. It is generally accepted that sugarcane goes through three stages prior to having the first acre of harvestable cane for delivery to the mills for processing. The first step is to plant cultivated seed cane. The second step is to harvest cultivated seed cane and plant it as propagated seed cane in the following year. The third step is to harvest the propagated seed cane and plant it as plant cane, which is then harvested the following year and sent to the mills for processing into raw sugar. Each stage has associated costs that must be considered. However, given that each harvested acre of cultivated seed cane will provide several acres of propagated seed cane which, in turn, provides several acres of plant cane, many of the costs associated with each stage must be spread across several acres rather than simply one acre.

Sugarcane planting ratio, the number of acres of sugarcane which can be planted from one harvested acre of seed cane, varies by sugarcane variety and planting method. Sugarcane varieties impact planting ratios due to differences in stalk populations per acre. Currently, three types of planting methods are utilized at different stages of the seed cane expansion process in Louisiana: hand planting, mechanical whole stalk planting, and mechanical hillside planting. For purposes of this report, the following planting ratios will be used to estimate total allocated planting cost per acre of plant cane planted: (1) hand planting whole stalk seed cane = 6.1; (2) one-row mechanical planting whole stalk seed cane = 5/1; and (3) one-row mechanical planting hillside seed cane = 3/1.

Given the assumptions listed above and using the LSU AgCenter Department Agricultural Economics and Agbusiness enterprise budgets, this report provides a procedure to estimate the total planting investment a producer would have in an acre of sugarcane at any point during the crop cycle. Depending on the stage of the planting process of a particular acre of sugarcane, estimates will differ. As a result, estimates of the total planting costs a producer would have invested in a sugarcane crop as of January 1, 2015 (prior to any cultivation operations and costs during the 2015 calendar year) are provided. Planting costs are listed for cultivated seed cane, propagated seed cane, and plant cane planted in 2014.

Two estimates of planted costs are presented in this report. Total variable planting costs and total planting costs. Total variable costs include primarily planting expenses for purchased seed cane as well as fuel, labor and repair expenses for field operations. Total planting costs include variable costs plus fixed expenses on equipment.

Table 1 presents total estimated allocated planting cost per acre of cultivated seed cane. This value represents the total estimated planting cost invested in an acre of cultivated seed cane planted in the previous year. Table 2 and 3 present total estimated allocated planting cost per acre associated with

1 Michael A. Deliberto, Research Associate, and Michael E. Salasii, Professor, Department of Agricultural Economics and Agbusiness, LSU AgCenter, Baton Rouge, Louisiana.
Allocation of Sugarcane Planting Costs in 2015
For Sugarcane Planted in 2014

Allocation of planting costs for cane planted in 2014 as of January 1, 2015:

- Cultured seed cane hand planted
  VC = $952
  TC = $1,135

- Propagated seed cane hand planted
  VC = $595
  TC = $800

- Propagated seed cane mech planted
  VC = $657
  TC = $866

- Wholestalk plant cane hand planted
  VC = $550
  TC = $758

- Wholestalk plant cane mech planted
  VC = $599
  TC = $813

- Billet planted plant cane
  VC = $767
  TC = $1,034

“field run” seed cane planted to be harvested for sugar
Prorated (Unrecovered) Sugarcane Planting Costs

For any sugarcane currently standing in the field

Prorated planting costs for standing crops of plant cane and stubble cane in 2015 planted in previous years:

- Hand planted cultured seed cane
- Hand planted propagated seed cane
- Hand planted field run seed cane
- Machine planted propagated seed cane
- Machine planted field run seed cane
- Billet planted seed cane

Standing crops in 2015 (year planted):

- Plant cane (2014)
- First stubble (2013)
- Second stubble (2012)
- Third stubble (2011)
Plant cane crop in 2015 = 100% of original planting cost

First stubble cane crop in 2015 = 67% of original planting cost for a 3-crop harvest cycle

First stubble cane crop in 2015 = 75% of original planting cost for a 4-crop harvest cycle
**Prorated (Unrecovered) Sugarcane Planting Costs**

*Calculating correct value for current age of cane*

<table>
<thead>
<tr>
<th>Crop stage / Planting method (year planted)</th>
<th>Original Allocated Planting Cost Per Acre in Year of Planting</th>
<th>Prorated Planting Cost Value Per Acre in the 2015 Crop Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Var. Cost</td>
<td>Total Cost</td>
</tr>
<tr>
<td><strong>SECOND-YEAR STUBBLE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand Planted-Cultured Seed Cane (2012)</td>
<td>$978</td>
<td>$1,151</td>
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<tr>
<td>Hand Planted-Propagated Seed Cane (2012)</td>
<td>$619</td>
<td>$613</td>
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<tr>
<td>Hand Planted-Field Run Seed Cane (2012)</td>
<td>$573</td>
<td>$770</td>
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<tr>
<td>Machine Planted-Propagated Seed Cane (2012)</td>
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<tr>
<td>Machine Planted-Field Run Seed Cane (2012)</td>
<td>$623</td>
<td>$824</td>
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<tr>
<td>Machine Planted-Billet Seed Cane (2012)</td>
<td>$788</td>
<td>$1,045</td>
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<tr>
<td><strong>THIRD-YEAR STUBBLE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand Planted-Cultured Seed Cane (2011)</td>
<td>$943</td>
<td>$1,112</td>
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<tr>
<td>Hand Planted-Propagated Seed Cane (2011)</td>
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<td>Hand Planted-Field Run Seed Cane (2011)</td>
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<tr>
<td>Machine Planted-Billet Seed Cane (2011)</td>
<td>$743</td>
<td>$994</td>
</tr>
</tbody>
</table>

- **Second stubble cane crop in 2015 = 33% of original planting cost for a 3-crop harvest cycle**
- **Second stubble cane crop in 2015 = 50% of original planting cost for a 4-crop harvest cycle**
- **Third stubble cane crop in 2015 = 25% of original planting cost for a 4-crop harvest cycle**
2015 Sugarcane Crop Enterprise Budgets
This report presents projected values for sugarcane crop enterprise budgets for all phases of sugarcane production in Louisiana for the 2015 crop year.

Allocation of Louisiana Sugarcane Planting Costs in 2015 for Sugarcane Planted in 2014
This report presents estimates of total sugarcane planting costs for sugarcane planted in 2014. These planting costs would be allocated to the 2015 plant cane and succeeding stubble crops.

Prorated Sugarcane Planting Costs in 2015
This report presents estimates of prorated (uncovered) planting costs for sugarcane in production for the 2015 crop year, including plant cane planted in 2014, first stubble planted in 2013, second stubble planted in 2012, and third stubble planted in 2011.

2014 Projected Sugarcane Production Farm Costs and Returns Model
The 2014 Projected Sugarcane Production Farm Costs and Returns Model was developed as a farm planning decision tool for Louisiana sugarcane growers. The model is an Excel spreadsheet that allows sugarcane producers to project sugarcane net returns for the coming year and to evaluate the impact of changes in yields, sugar prices, input prices and other factors on whole farm net returns and break-even values.
Valuing a Standing Sugarcane Crop

Example 1 – New grower takes over operation January 1, 2015

Situation:
10 acres of plant cane. Landlord takes on new grower (3-yr harvest cycle)
Current grower harvests through third stubble

Calculation of Crop Value:
Plant cane - unrecovered planting cost, machine planted field run seed cane (2014)
$813/acre x 10 acres = $8,130

Total crop value due current grower ≈ $8,130

Additional Considerations:
Condition of the crop (have recommended practices been followed)
Expected crop cycle length of new grower (does this matter)
Valuing a Standing Sugarcane Crop
Example 2 – New grower takes over operation January 1, 2015

**Situation:**
- 10 acres of third stubble. Landlord takes on new grower (3-yr harvest cycle)
- Current grower harvests through third stubble

**Calculation of Crop Value:**
Third stubble - unrecovered planting cost, machine planted field run seed cane (2011)
\[
\text{\$195/acre x 10 acres } = \text{ \$1,950}
\]

**Total crop value current grower wants** ≈ \$1,950

**Additional Considerations:**
- Condition of the crop *(have recommended practices been followed)*
- Expected crop cycle length of new grower *(might want to plow out 3rd stubble)*
Valuing a Standing Sugarcane Crop
Example 3 – Pipeline destroys part of tract on May 1, 2015

Situation:
10 acre tract of plant cane and pipeline work destroys 1.5 acres
Current grower harvests through second stubble

Calculation of Crop Value:
Net present value of future grower net returns:
- Plant cane = 1.5 acres x 8,000 lbs/A x $0.25/lb x 50.8% grower share (2015)
- 1st stubble = 1.5 acres x 7,500 lbs/A x $0.25/lb x 50.8% grower share (2016)
- 2nd stubble = 1.5 acres x 7,000 lbs/A x $0.25/lb x 50.8% grower share (2017)

plus grower’s share of molasses payments ($1.25/ton on 35 tons/A)
minus variable cultivation and harvest costs ($450/A x 1.5 acres x 3 years)

Total crop value due current grower ≈ $2,457

Additional Considerations:
What about landlord share? Is the landlord losing any money?
What about mill share? If the cane is not harvested, is the mill losing money?
Valuing a Standing Sugarcane Crop

Example 4 – Lease is terminated on January 1, 2015 for land sale

Situation:
10 acre tract of plant cane. Lease is being terminated. Land sold for development
Current grower harvests through second stubble

Calculation of Crop Value:
Net present value of future grower net returns:
Plant cane = 10 acres × 8,000 lbs/A × $0.25/lb × 50.8% grower share (2015)
1st stubble = 10 acres × 7,500 lbs/A × $0.25/lb × 50.8% grower share (2016)
2nd stubble = 10 acres × 7,000 lbs/A × $0.25/lb × 50.8% grower share (2017)

plus grower’s share of molasses payments ($1.25/ton on 35 tons/A)
minus variable cultivation and harvest costs ($450/A × 10 acres × 3 years)

Total crop value due current grower ≈ $16,365

Additional Considerations:
What about landlord share? Is the landlord losing any money?
What about mill share? If the cane is not harvested, is the mill losing money?
Sugarcane Crop Lease Language
Vague, non-specific crop lease language commonly found

“Should this crop lease be terminated before the end of the agreed to lease term, the Lessee (current tenant grower) will be paid
the value of plant cane, first stubble and second stubble.”

Three major problems with this language:
1) What is meant by the term “value”?
2) Does plant cane, first and second stubble reflect current farm production acres?
3) Does this language imply payment on all acreage through end of crop cycle?
Sugarcane Crop Lease Language
Vague, non-specific crop lease language commonly found

Should this crop lease be terminated before the end of the agreed to lease term, the Lessee (current tenant grower) will be paid the value of plant cane, first stubble and second stubble.

Situation: 10 acres PC / 10 acres 1<sup>st</sup> ST / 10 acres 2<sup>nd</sup> ST / 10 acres 3<sup>rd</sup> ST / 5 acres 4<sup>th</sup> ST

Five possible interpretations of “value” based on this lease language for 45 total acres:
1) Unrecovered planting cost of PC, 1<sup>st</sup> ST and 2<sup>nd</sup> ST, current acres only - $16,310
2) Expected net returns from PC, 1<sup>st</sup> ST and 2<sup>nd</sup> ST, current acres only - $18,293
3) Grower revenue from PC, 1<sup>st</sup> ST and 2<sup>nd</sup> ST, current acres only - $31,793
4) Future net returns from PC, 1<sup>st</sup> ST and 2<sup>nd</sup> ST, through harvest of 2<sup>nd</sup> ST - $35,315
5) Future net returns from PC through 4<sup>th</sup> ST, through harvest of 4<sup>th</sup> ST - $77,365
1) Should this crop lease be terminated before the end of the current sugarcane crop cycle and the sugarcane crop will remain in production with another tenant grower, the Lessee (current tenant grower) should be paid the total sugarcane unrecovered planting costs applicable to the current sugarcane crop ages (for this operation’s normal sugarcane crop cycle length – i.e., through harvest of third stubble), assuming recommended production practices have been followed by the Lessee.

2) Should this crop lease be terminated before the end of the current sugarcane crop cycle and sugarcane production will be terminated before end of the crop cycle, the Lessee (current tenant grower) should be paid the net present value of estimated future net returns above variable cultivation and harvest costs attributable to the tenant grower. Future net returns will be estimated on all sugarcane acreage currently in production affected by the termination of this lease, through the end of this operation’s normal crop cycle – i.e., through harvest of third stubble.
Economic Value of Prescribed Sugarcane Burning

**Base Level Production Data (2011-2013 avg.)**

(a.) 424,647 acres of sugarcane in production
(b.) 397,280 acres of sugarcane harvested for sugar
(c.) 13.578 million tons of sugarcane harvested
(d.) 227 pounds per ton sugar recovery
(e.) $0.276 average market price

**Annual Value of Burning**

- Reduction in additional transportation costs
  $14,181,869 per year.

- Reduction in additional processing costs
  $6,129,132 per year.

- Reduction in sugar recovery losses
  $29,784,658 per year.

- Reduction in stubble crop cane yield losses
  $70,253,537 per year.

**Total annual value of the economic benefit of burning to the Louisiana sugarcane industry:**
 $120,349,196 per year.
Economic Value of Prescribed Sugarcane Burning

This report presents an estimate of the economic value of prescribed burning to the Louisiana sugarcane industry. Four important benefits of prescribed sugarcane burning were valued at an annual benefit of approximately $120 million per year.

Prescribe Burn Plan Worksheet
A prescribe burn plan should be completed by each grower before the harvest season. One plan can be completed for an entire farm or for an individual field. All information needed to plan and conduct a burn and for comments concerning the burn is contained in the form. The plan was devised to help farm operators control the burning of sugarcane to lessen their impact on public health and welfare, which includes pre-burn considerations and weather information.

Certified Prescribed Burn Manager Program for Sugarcane
A Certified Prescribed Burn Manager (CPBM) is an individual who successfully completes a Louisiana Department of Agriculture and Forestry (LDAF) approved certification training program, passes a written test, has performed five sugarcane burns successfully and is certified by the LDAF.

Louisiana Smoke Management Guidelines for Sugarcane Harvesting
These guidelines are intended to help manage smoke and ash from sugarcane prescribed burning operations to lessen their impact on public health and welfare.
Michael E. Salassi, Professor

Dept. of Agricultural Economics & Agribusiness
101 Martin D. Woodin Hall
Louisiana State University Agricultural Center
Baton Rouge, LA  70803

Phone:  225-578-2713
Fax:      225-578-2716
Email:   msalassi@agcenter.lsu.edu