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

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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. Salassi[1]
Department of Agricultural Economics & Agribusiness

Staff Report No. 2014-14 *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 cultured seed cane. The second step is to harvest cultured 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 cultured 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 wholestalk planting, and mechanical billet 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 wholestalk seed cane = 8 / 1; (2) one-row mechanical planting whole stalk seed cane = 5 / 1; and (3) one-row mechanical planting billeted seed cane = 3 / 1.

Given the assumptions listed above and using the LSU AgCenter Department Agricultural Economics and Agribusiness 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. However, depending on the stage of the planting process of a particular acre of sugarcane, these 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 cultured seed cane, propagated seed cane, 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 cultured seed cane. This value represents the total estimated planting cost invested in an acre of cultured seed cane planted in the previous year. Table 2 and 3 present total estimated allocated planting cost per acre associated with

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PRORATED SUGARCANE PLANTING COSTS FOR THE 2015 CROP YEAR FOR PLANT CANE AND STUBBLE CROPS

Michael A. Deliberto and Michael E. Salassi
Department of Agricultural Economics & Agribusiness

Staff Report No. 2014-15 *September 2014*

The remaining, unrecovered planting cost of plantcane and stubble cane sugarcane crops are determined by the actual planting cost in the year in which the sugarcane crop was planted. The costs of planting will vary from year-to-year depending upon many factors which include cost of seed cane, fuel, fertilizer, chemicals, etc. Therefore, the estimated planting cost in the year in which the sugarcane crop was planted, as well as the expected number of years of harvest, forms the basis for prorating costs (unrecovered planting costs) over the life of the sugarcane crop cycle.

The estimated costs of planting sugarcane are prorated by age based on remaining production. Two sugarcane crop production cycles are common in Louisiana: (a.) a 4-year cycle and (b.) a 5-year cycle. For the 4-year cycle, the first year of fallow/plant operations is followed by three years of harvest (i.e., plant cane, first stubble and second stubble crops). Percentage values used to prorate sugarcane planting costs over a 4-year/3-harvest crop cycle are: plant cane crop – 100%, first stubble crop – 67% and second stubble crop – 33%. For the 5-year cycle, the first year of fallow/plant operations is followed by four years of harvest (i.e., plant cane, first stubble, second stubble and third stubble crops). Percentage values used to prorate sugarcane planting costs over a 5-year/4-harvest crop cycle are: plant cane crop – 100%, first stubble crop – 75%, second stubble crop – 50% and first stubble – 25%. The estimated prorated sugarcane planting costs per acre for these two crop cycles in the 2015 crop year based upon estimated planting costs in the year of planting (indicated in parenthesis) is shown below in Table 1.

Table 1. Variable and Total Prorated Sugarcane Planting Costs for Plant-cane, First-, Second- and Third-Year Stubble Cane in the 2015 Crop Year.

Crop stage / Planting method (year planted)	Original Allocated Planting Cost Per Acre in Year of Planting		Prorated Planting Cost Value Per Acre in the 2015 Crop Year			
			3-Crop Cycle (PC, 1ST, 2ND)		4-Crop Cycle (PC, 1ST, 2ND, 3RD)	
	Var. Cost	Total Cost	Var. Cost	Total Cost	Var. Cost	Total Cost
PLANT-CANE CROP [1]						
Hand Planted-Cultured Seed Cane (2014)	$952	$1,135	$952	$1,135	$952	$1,135
Hand Planted-Propagated Seed Cane (2014)	$595	$800	$595	$800	$595	$800
Hand Planted-Field Run Seed Cane (2014)	$550	$758	$550	$758	$550	$758
Machine Planted-Propagated Seed Cane (2014)	$657	$866	$657	$866	$657	$866
Machine Planted-Field Run Seed Cane (2014)	$599	$813	$599	$813	$599	$813
Machine Planted-Billet Seed Cane (2014)	$767	$1,034	$767	$1,034	$767	$1,034
FIRST-YEAR STUBBLE [2]						
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Allocation of Sugarcane Planting Costs in 2015

For Sugarcane Planted in 2014

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1

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

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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)

Prorated (Unrecovered) Sugarcane Planting Costs

Calculating correct value for current age of cane

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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

Second stubble cane crop in 2015 =
33% of original planting cost
for a 3-crop harvest cycle

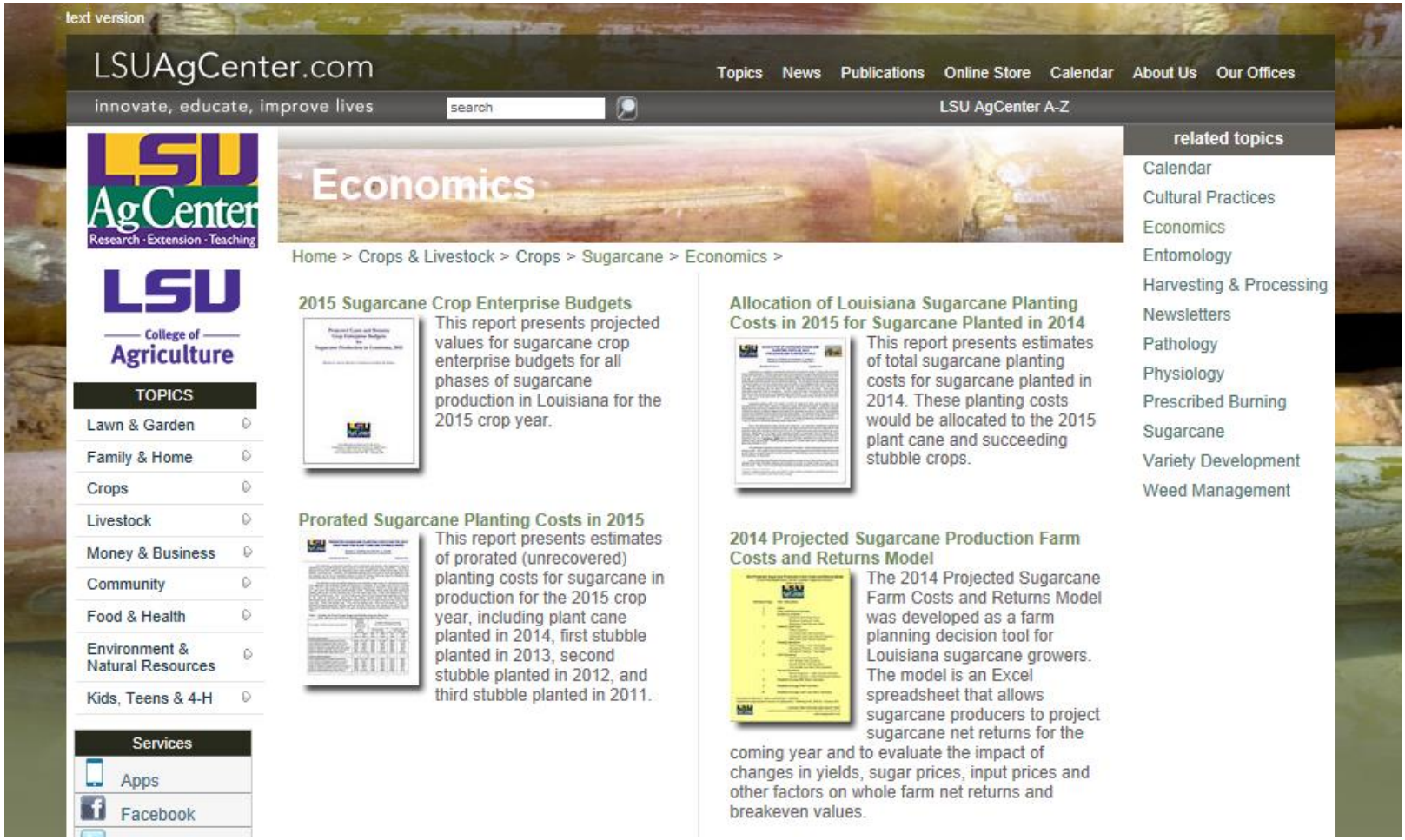
Second stubble cane crop in 2015 =
50% of original planting cost
for a 4-crop harvest cycle

Crop stage / Planting method (year planted)	Original Allocated Planting Cost Per Acre in Year of Planting		Prorated Planting Cost Value Per Acre in the 2015 Crop Year			
			3-Crop Cycle (PC, 1ST, 2ND)		4-Crop Cycle (PC, 1ST, 2ND, 3RD)	
	Var. Cost	Total Cost	Var. Cost	Total Cost	Var. Cost	Total Cost
SECOND–YEAR STUBBLE [3]						
Hand Planted-Cultured Seed Cane (2012)	$978	$1,151	$323	$380	$489	$576
Hand Planted-Propagated Seed Cane (2012)	$619	$813	$204	$268	$310	$407
Hand Planted-Field Run Seed Cane (2012)	$573	$770	$189	$254	$287	$385
Machine Planted-Propagated Seed Cane (2012)	$684	$880	$226	$290	$342	$440
Machine Planted-Field Run Seed Cane (2012)	$623	$824	$206	$272	$312	$412
Machine Planted-Billet Seed Cane (2012)	$788	$1,040	$260	$343	$394	$520
THIRD-YEAR STUBBLE [4]						
Hand Planted-Cultured Seed Cane (2011)	$943	$1,112	--	--	$236	$278
Hand Planted-Propagated Seed Cane (2011)	$579	$769	--	--	$145	$193
Hand Planted-Field Run Seed Cane (2011)	$535	$727	--	--	$134	$182
Machine Planted-Propagated Seed Cane (2011)	$642	$834	--	--	$161	$208
Machine Planted-Field Run Seed Cane (2011)	$584	$781	--	--	$146	$195
Machine Planted-Billet Seed Cane (2011)	$743	$994	--	--	$186	$249

Third stubble cane crop in 2015 =
25% of original planting cost
for a 4-crop harvest cycle

LSU AgCenter Sugarcane Economics Web Page

www.lsuagcenter.com -> Crops / Sugarcane / Economics



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)
$195/acre x 10 acres = $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 x 8,000 lbs/A x $0.25/lb x 50.8% grower share (2015)
1st stubble = 10 acres x 7,500 lbs/A x $0.25/lb x 50.8% grower share (2016)
2nd stubble = 10 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 10 acres x 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 1st ST / 10 acres 2nd ST / 10 acres 3rd ST / 5 acres 4th ST

Five possible interpretations of "value" based on this lease language for 45 total acres:

1) Unrecovered planting cost of PC, 1st ST and 2nd ST, current acres only - **$16,310**
2) Expected net returns from PC, 1st ST and 2nd ST, current acres only - **$18,293**
3) Grower revenue from PC, 1st ST and 2nd ST, current acres only - **$31,793**
4) Future net returns from PC, 1st ST and 2nd ST, through harvest of 2nd ST - **$35,315**
5) Future net returns from PC through 4th ST, through harvest of 4th ST - **$77,365**

Sugarcane Crop Lease Language

Specific Language to Address Each Valuation Situation

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

Economic Value of Prescribed Burning to the Louisiana Sugarcane Industry

LSU AgCenter
Research · Extension · Teaching

What is prescribed burning?

Prescribed burning is a crop management practice widely used in the production and harvest of many agricultural and timber products across the United States. In Louisiana, prescribed burning is widely used in sugarcane production to reduce the amount of excess plant material associated with the harvest, transportation and processing of sugarcane into raw sugar and molasses. ***The annual economic value of prescribed burning to the Louisiana sugarcane industry is estimated to be approximately $120 million per year.***

Importance of sugarcane production to Louisiana's agricultural sector

Sugarcane is one of the major agricultural commodities produced in Louisiana. With more than 400,000 acres of sugarcane in production and 11 factories processing approximately 14 million tons of sugarcane into 1.5 million tons of raw sugar and more than 95 million gallons of molasses annually, sugarcane is one of the major economic drivers of the state's agricultural sector. Louisiana also is one of the major sugarcane producing states in the United States. The value of the state's sugarcane crop has averaged $948 million per year during the 2011-2013 crop years.

Benefits of prescribed burning in Louisiana sugarcane production

The burning of sugarcane as a crop harvest management practice has many benefits, both direct and indirect. Some of the direct benefits of sugarcane burning in Louisiana include:

- Improving the efficiency of harvesting sugarcane in the field, thereby reducing the cost of harvesting sugarcane.
- Reducing the number of truckloads needed to transport harvested sugarcane to the mills, thereby reducing traffic as well as wear and tear on public roads.
- Decreasing the volume of plant material that must be processed at sugar mills, thereby shortening the harvest and processing season.
- Increasing the recovery of raw sugar from processed sugarcane, thereby improving the overall quality of the sugar produced.
- Decreasing yield losses in subsequent sugarcane stubble crops, thereby extending the crop cycle and reducing planting costs.

Some of the indirect benefits of sugarcane burning include:

- Reducing plant diseases that might overwinter on remaining crop material.
- Reducing insect pest populations in fields on subsequent stubble crops.
- Reducing the establishment and spread of weeds that affect crop yields.

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

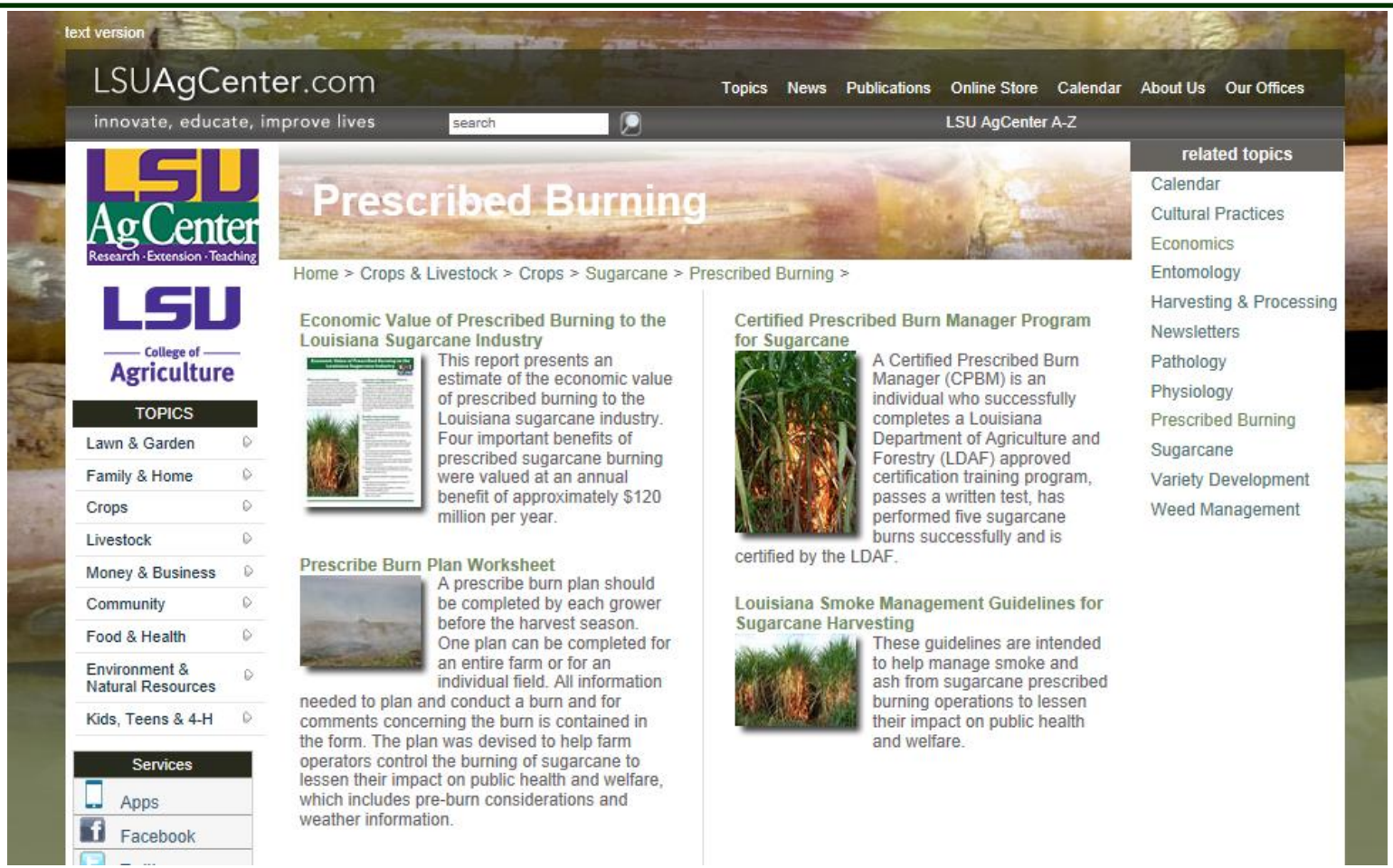
Annual Value of Burning

- 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

www.lsuagcenter.com -> Crops / Sugarcane / Prescribed Burning

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