

Economic Value of Prescribed Burning to the Louisiana Sugarcane Industry



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.

Economic value of sugarcane burning in Louisiana on an annual basis

Four direct components of the annual economic benefit of sugarcane burning are estimated here. The annual economic benefit values presented below were estimated using 2011-2013 crop year average sugarcane production data as a base. These average base data values included: (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) an average sugar recovery of 227 pounds of raw sugar per ton of cane and (e) an average raw sugar market price of 27.6 cents per pound. In addition, an estimated 20 percent of additional plant material volume was assumed to be present in the field without burning, most of which would remain on the field after harvest, although a sizable portion also would be transported to the mills along with harvested sugarcane.

- **Reduction in additional transportation costs –**
Without burning, the addition of lighter plant trash material in trucks hauling harvested sugarcane to the mills would reduce the hauling weight from the typical 27 tons of sugarcane per truckload to about 25 tons per load. This would require an estimated 94,546 additional truckloads to haul the state's annual sugarcane crop to mills. *Using a representative hauling cost rate of \$6 per ton, the estimated value of these additional transportation costs would be \$14.18 million per year.*
- **Reduction in additional processing costs –**
Additional plant trash material shipped to the mills with harvested sugarcane as a result of not burning would result in the processing of an additional 1.35 million tons of plant material at the state's raw sugar mills. *Using a typical in-season variable grinding cost per ton for an average sized mill in the state, the estimated value of this additional processing cost would be nearly \$6.13 million per year.*



- **Reduction in sugar recovery losses –**
Additional plant trash material processed would reduce sugar recovery by about 3 pounds per ton of cane for every additional 1 percent trash. Without burning, the additional plant material processed at mills would be approximately 9.1 percent, thereby reducing sugar recovery by 27 pounds per ton of cane processed. *Using the previous three-year average prices for raw sugar and molasses, and factoring in typical price discounts for affected sugar quality, the estimated revenue loss from reduction in sugar recovery would be more than \$29.78 million per year.*
- **Reduction in stubble crop cane yields losses –**
Without burning, additional plant trash material left on the fields also would reduce sugarcane yields for the succeeding stubble crops. *Using an approximate yield reduction factor of 11 percent, based on previous research, the estimated value of this sugarcane yield reduction for stubble crop acreage would be \$70.25 million per year.*

Combining these four values provides a direct estimate of the annual value of the economic benefit of burning to the Louisiana sugarcane industry of almost \$120.35 million per year.

LSU AgCenter Authors

Michael E. Salassi, Professor
Michael A. Deliberto, Research Associate
Department of Agricultural Economics and Agribusiness
Baton Rouge, La.

Kenneth A. Gravois, Sugarcane Specialist
Sugar Research Station, St. Gabriel, La.

Benjamin L. Legendre, Department Head and Professor
Audubon Sugar Institute, St. Gabriel, La.

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William B. Richardson, LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
LSU College of Agriculture

Pub. 3362 9/14

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