



ECONOMIC VALUE OF PRESCRIBED BURNING TO THE LOUISIANA SUGARCANE INDUSTRY



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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 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 economic value of prescribed burning to the Louisiana sugarcane industry is just over \$157 million per year.***

Importance of sugarcane production to Louisiana's agricultural sector

Sugarcane is one of the major agricultural row crops produced in Louisiana. With more than 500,000 acres of sugarcane in production and 11 factories processing approximately 16 million tons of sugarcane into 1.9 million tons of raw sugar and more than 91 million gallons of molasses annually, sugarcane is one of the major economic drivers of the state's agricultural sector. Louisiana is also one of the major sugarcane producing states in the United States. The annual value of the state's sugarcane crop has averaged \$1.256 billion per year over the 2020-2022 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. In Louisiana some of the direct benefits of sugarcane burning 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 which must be processed at raw sugar mills, thereby shortening the harvest and processing season.



Prescribed burning is used in sugarcane production to reduce the amount of excess plant material associated with the harvest, transportation and processing of sugarcane. Photo by Kenneth Gravois

- 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 which might overwinter on remaining crop material.
- Reducing insect pest populations within fields on subsequent stubble crops.
- Reducing the establishment and spread of weeds which impact 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 2020-2022 crop year average sugarcane production data as a base. These average base data values included: (a.) 505,419 acres of sugarcane in production, (b.) 472,567 acres of sugarcane harvested for sugar, (c.) 16.305 million tons of sugarcane harvested, (d.) an average sugar recovery of 236 pounds of raw sugar per ton of cane, and (e.) an average raw sugar market price of \$0.301 per pound. In addition, an estimated 20% of additional plant material volume would be assumed to be present in the field without burning, most of which would remain on the field after harvest, although a sizeable portion would also be transported to the mill 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 113,538 additional truckloads to haul the state's annual sugarcane crop to mills. *Using a representative hauling cost rate of \$7 per ton of sugarcane, the estimated value of this additional transportation cost would be \$19,869,063 per year.*
- **Reduction in additional processing costs.** Additional plant trash material shipped to the mill along with harvested sugarcane as a result of not burning would result in the processing of an additional 1.631 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 \$7,254,660 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% trash. Without burning, the additional plant material processed at mills would



Some sugarcane is burned prior to harvest. This is an example of a standing burn in sugarcane prior to harvest.

be approximately 9.1%, 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 impacted sugar quality, the estimated value of revenue loss from reduction in sugar recovery would be \$34,031,313 per year.*

- **Reduction in stubble crop cane yield losses.** Additional plant trash material left on the fields without burning would reduce sugarcane yields on the succeeding stubble crops. *Using an approximate yield reduction factor of 11% based on previous research, the estimated value of this sugarcane yield reduction on stubble crop acreage would be \$96,147,450 per year.*

Combining these four values together provides a direct estimate of the annual value of the economic benefit of burning to the Louisiana sugarcane industry: \$157,297,053 per year.



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