

# Louisiana SUGARCANE BURNING

## Why is the sugarcane industry important to Louisiana?

Of the domestic sugar industries, Louisiana has the oldest and most historic. Sugarcane arrived in Louisiana with the Jesuit priests in 1751 and, in 1795, Etienne deBore granulated sugar on a commercial scale at Audubon Park in New Orleans. The Louisiana sugarcane industry is in its third century of existence, having celebrated its 200th year of continuous sugar production in 1995.

Sugarcane is produced on more than 450,000 acres of land in 25 of the 64 Louisiana parishes. In 1999, total production of 15,982,000 tons of sugarcane yielded 1,675,000 tons of sugar. Growers averaged 37 tons of sugarcane and 7,800 pounds of sugar per acre, both new state records. The value of this sugar to farmers, factories and landlords exceeded \$740 million, although the direct economic value generated from the crop exceeded \$2 billion. Sugarcane ranks first in the state among plant commodities, which also include rice, soybeans, corn and cotton. Louisiana produces about 16 percent of the total sugar grown in the United States (includes both sugar from sugar beet and sugarcane). Approximately 32,000 people are employed in the production of sugar in Louisiana on 690 farms and in 18 factories.

## Why do farmers burn sugarcane in the first place?

Farmers burn sugarcane to reduce the amount of leafy extraneous material, including stalk tops, delivered with the cane to the factories for processing.



## What are the benefits of burning sugarcane?

The benefits of burning sugarcane are:

- An overall lower cost of production that benefits farmers and consumers
- Allows more efficient harvesting of sugarcane in the field
- Reduces the number of hauling units on the highways delivering sugarcane to the factory for processing, thus reducing wear and tear on public roads
- Decreases the volume of material to be processed by the factories
- Shortens the harvest season by as much as 10 percent
- Increases the yield of sugar recovered per ton of sugarcane by the factories and improves overall quality of the sugar produced
- Reduces wear and tear on field and factory equipment
- Reduces energy expenditures in the field and by the factory



*Burning standing cane prior to combine harvesting.*

### **What will happen if farmers are not able to burn sugarcane?**

The ability of farmers to burn sugarcane is a significant economic factor for the survival of the individual farmer and the sugarcane industry. The sugarcane plant consists of about 75 percent to 80 percent net cane (stalks) from which the juice is extracted and the sugar crystalized. The other 20 percent to 25 percent of the plant consists of leafy material, including tops, from which little or no sugar is produced. This leafy material is called trash. Burning sugarcane before harvest removes from one-half to two-thirds of this trash that would otherwise contribute nothing to sugar production. Further, it is estimated that, by not burning this trash, the industry would spend more than \$24 million in transportation and processing costs. Research data show that there is an actual reduction of 3 pounds in the yield of recoverable sugar per gross ton of sugarcane for each 1 percent of trash processed by the factory. There is currently no profitable or effective way to deal with this large volume of trash by mechanical means.

Until proven technology allows economically efficient harvesting without burning, it is critical that growers and processors do the best job possible with regard to smoke and ash management. Louisiana is not the only state, nor is sugar production the only industry, facing this challenge. Every industry that uses prescribed burning recognizes that a cost-effective mechanism for reducing or eliminating open field burning is a research topic of high importance. Further, because of current low domestic sugar prices, the farmer would be hard pressed to survive without burning to reduce production costs and improve quality of the product delivered to the factory for processing.

### **What is a prescribed burn?**

A prescribed burn can be defined as a controlled application of fire in a confined predetermined area to accomplish the harvest of sugarcane under specified smoke and ash management guidelines. A prescribed burn is used in sugarcane production to reduce the trash in harvested cane. This prescribed burn can occur in cut or standing cane: in cut cane after the cane has been harvested by the whole-stalk harvester and placed on the ground between two rows (called the heap row), or, in standing cane before being harvested by the combine harvester.



*Burned standing cane.*



*Burned standing cane being harvested by combine.*



*Burning cane on heap rows.*

## What are the recommended procedures to be used in the prescribed burning of sugarcane?

The recommended procedures in prescribed burning of sugarcane are:

- Step 1.** Identify areas sensitive to smoke and ash.
- Step 2.** Develop a prescribed burn plan.
- Step 3.** Obtain fire weather forecast from U.S. Weather Service.
- Step 4.** Determine smoke category day.
- Step 5.** Determine smoke and ash screening distance.
- Step 6.** Determine trajectory of smoke and ash plume.
- Step 7.** Evaluate the prescribed burn results.

**Note:** In prescribed burning of sugarcane, it is recognized that numerous variables affect the fire behavior and resulting smoke and ash. These procedures do not attempt to consider all the variables, but they offer basic guidelines.

## What is smoke and ash management?

Smoke and ash management can be defined as conducting a prescribed burn under recommended weather conditions and with burning techniques designed to reduce the impact on the environment, public health and welfare from smoke and ash generated from prescribed burning.



*Burned cane on heap rows.*

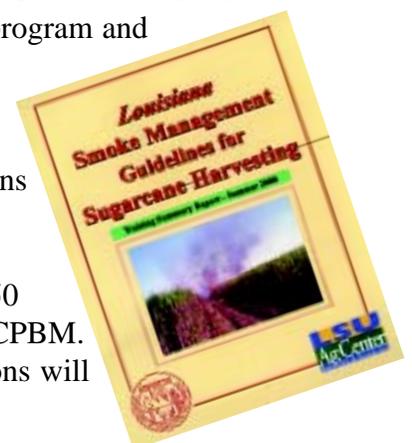
## What are the objectives of smoke and ash management?

The objectives of smoke and ash management are:

- Be a good and considerate neighbor.
- Minimize the adverse effect caused by open field burning of sugarcane.
- Prevent smoke and ash from being blown across public highways and airports.
- Prevent smoke and ash from affecting public areas, especially public health facilities such as hospitals, clinics, nursing homes and doctors' offices, etc.
- Prevent smoke and ash from affecting schools during times when students and teachers are present.
- Prevent smoke and ash from affecting individual homes, subdivisions and other housing facilities.
- Minimize ash fallout that may result from burning sugarcane.

## What is being done now to help this situation?

The Louisiana Department of Agriculture and Forestry (LDAF), the American Sugar Cane League of the U.S.A., Inc., and the LSU AgCenter developed the following training curriculum titled, *Louisiana Smoke Management Guidelines for Sugarcane Harvesting*. The program is called the Certified Prescribed Burn Manager (CPBM) program and is administered by the LDAF. To date, there have been eight training sessions where 1,374 farmers and their employees have received training, with 1,350 having been certified as CPBM. Additional training sessions will be scheduled as needed.



## What is a Certified Prescribed Burn Manager (CPBM)?

A CPBM is an individual who:

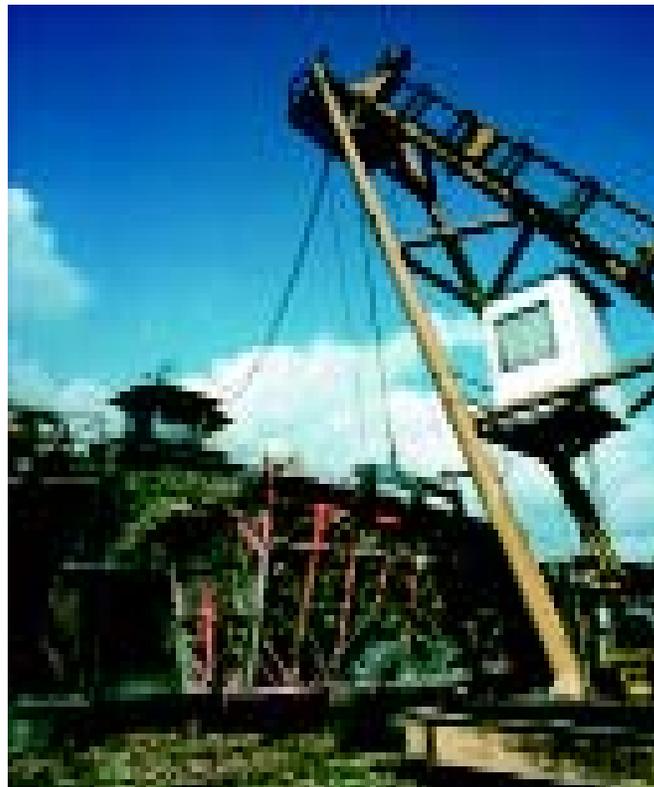
- (1) Has successfully completed the approved certification program as outlined in the training manual and passed a written test.
- (2) Has performed at least five (5) prescribed sugarcane burns.
- (3) Has received a letter of certification from the Louisiana Department of Agriculture and Forestry.

## What are additional responsibilities of a Certified Prescribed Burn Manager (CPBM)?

The CPBM will provide education and training to all of their employees who help to conduct burning operations. Further, the CPBM should ensure that all individuals who conduct prescribed burns are trained and certified. A thorough explanation of the goals and recommendations will help employees understand the importance of smoke and ash management. Additionally, it should be emphasized that prescribed burns should not go unattended. Accordingly, a CPBM should be on site whenever sugarcane open field burning activities are conducted. Further, proper equipment for controlling and confining fires, including a water tank, should be available at all burns. The guidelines taught in the sugarcane prescribed burn management training program are designed to minimize the concentrations of smoke and ash in sensitive areas and provide for cleaner air. The implementation of these voluntary guidelines will allow the industry to manage smoke and ash from sugarcane burning more effectively. Growers are strongly encouraged to routinely incorporate these guidelines as standard harvesting practices.

## What can be expected with the application of these guidelines?

Application of these guidelines should minimize the concentration of smoke and ash in sensitive areas and help to maintain air quality standards.



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Information was obtained from the following sources: *Louisiana Smoke Management Guidelines for Sugarcane Harvesting* prepared by William A. Carney, Environmental Science Division, LSU AgCenter; Brad Spicer and Butch Stegall, Office of Soil and Water, Louisiana Department of Agriculture and Forestry; and Carrie Borel, Environmental Programs, LSU AgCenter; *Louisiana Smoke Management Guidelines for Sugarcane Harvesting, Training Summary Report Summer 2000* prepared by William A. Carney and *The Louisiana Sugar Industry* prepared and distributed by the American Sugar Cane League of the U.S.A., Inc.

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