# Variety BRS3280BtRR

A sugarcane variety that combines quality and management efficiency



Pangeia Biotech

The BRS3280BtRR, developed in partnership between Embrapa and PangeiaBiotech, is a sugarcane variety combining three traits of great importance.

- Resistance to sugarcane borer (*Diatraea saccharalis*).
- Resistance to sugarcane giant borer (*Telchin licus*).
- Resistance to glyphosate.

### Technological Innovation

Elite sugarcane events expressing high levels of insecticide toxins, conferring resistance to insect pests, were generated by genetic engineering. A gene conferring resistance to the herbicide glyphosate was also introduced in the variety.

BRS3280BtRR is derived from the sugarcane variety SP80-3280. Among its characteristics, the following can be highlighted:

- Intermediate tillering.
- Late harvest (July to October).
- Intermediate lodging.

- High sucrose content and good productivity in the ratoons.
- Suitable for mechanical harvesting.
- Good canopy projection between rows.



### **The Insect Pests**

#### Sugarcane borer

The sugarcane borer is one of the most important pests of sugarcane causing estimated losses up to R\$ 5 billion per year. It occurs throughout the Brazilian territory causing sugarcane yield loss and damage such as increased fiber and decreased sucrose content.

### Sugarcane giant borer

The sugarcane giant borer is another important pest to the sugarcane industry. It occurs mainly in Northeast Region and is associated with the straw left on the soil as an agricultural practice, which hides infested ratoons.



## Impacts of the sugarcane borer and giant borer

- Losses estimated in R\$ 2,000.00 per ha/year.
- Increase in fiber content.
- Decrease in sucrose content.
- Increase in reducing sugar content.
- Increase in phenolic compounds content.

## Advantages of BRS3280BtRR

- Reduces significantly the cost of controlling sugarcane borer and giant borer with higher efficiency.
- Facilitates glyphosate application at any developmental stage of the crop and enables aerial application.
- Accelerates the process of pest control and increases the shelf life of the variety.
- Provides double protection against insect pest infestation.
- Preserves non-target insects and pollinating agents. The expressed toxins are highly specific to the targeted insect pests.



### Weed Control

Glyphosate application for weed control is a widely disseminated practice. Therefore, a glyphosate resistant variety is very desirable.

## Impacts of weeds on sugarcane production

- Reduced productivity due to crop-weed competition for resources (water, nutrients, light, etc).
  - Increased production costs.

## Advantages of BRS3280BtRR

- Reduces significantly the cost of management such as weed removal and application of herbicides.
- Reduces crop-weed competition by favoring the glyphosate use for weed control.



This is the first transgenic sugarcane variety in Brazil with resistance to sugarcane borer, giant borer and glyphosate.



Promotion of resistance sugarcane borer, giant borer and glyphosate by genetic engineering.



Increased profitability in the carbon credit market.



Reduction on production costs.

### More information available at:

#### Embrapa Agroenergy

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Agreement

