















CIGB-CC6: a short-season soybean genotype resistance to the herbicide glyphosate

CIGB-CC6: genotipo de soya de ciclo corto resistente al herbicida Glifosato

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ABSTRACT : CIGB-CC6 is a transgenic soybean genotype, obtained by hybridization and subsequent inbreeding and selection up to F₈ generation. It presents resistance to commercial herbicide Glyphosate and a short period of 90 days in the spring-summer season. Descriptors related to plant architecture and the first pod insertion height allows the mechanized harvest of the grain. Characteristics of this genotype constitute an alternative for direct seeding and its cultivation is recommended for production in the spring-summer season in rotation with corn, rice and potatoes.

Key words: soybean, season, hybridization, Glyphosate.

RESUMEN: CIGB-CC6 es un genotipo de soya transgénica, obtenido por hibridación y subsiguientes autofecundaciones y selección hasta la generación F₈. Presenta resistencia al herbicida comercial Glifosato y un ciclo corto de 90 días en la época de primavera verano. Los descriptores relacionados con la arquitectura de las plantas y la altura de la primera vaina permiten la cosecha mecanizada del grano. Las características de este genotipo constituyen una alternativa para la siembra directa y se recomienda su cultivo para producción en la época de primavera verano en rotación con maíz, arroz y papa.

Palabras clave: soja, resistencia, hibridación, Glifosato.

INTRODUCTION

In Cuba, one of the main limitations in agriculture is related to the effective control of weeds in crops of interest. The genetic breeding program of Cuban soybean varieties includes the introgression of the glyphosate resistance gene

from event GTS40-3-2, which allows the application of this total herbicide in post-emergence. As a result of this program, a new genotype called CIGB-CC6 is available, which is characterized by its resistance to the herbicide glyphosate, a yield potential between 3 and 5 t ha⁻¹ and a crop cycle of 90 days.

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ORIGIN

The CIGB-CC6 genotype is the result of the introgression of the GTS40-3-2 event present in the Carolina RP5 genotype, by crossing and subsequent self-fertilization between the commercial genotype Incasoy 27 and Carolina RP5 and the following selection stages under field conditions. The stage with the highest level of segregation (F2-F6) was developed in the experimental plot of the CIGB and later a regionalization study was carried out with the F7 and F8 generations (practical homozygosity) in soybean producing areas of the provinces of Sancti Spiritus, Matanzas and Mayabeque. As part of the agronomic characterization, the stability in terms of resistance to glyphosate of each of the descendants from F4 and the botanical descriptors of the F8 generation was demonstrated in regionalization trials carried out in the center and west of the country.



Photo 1. CIGB-CC6 new glyphosate-resistant, short-cycle transgenic soybean genotype grown in the spring-summer season at the CIGB experimental plot

DESCRIPTION

The main phenological, morphological characteristics and agronomic performance of the soybean genotype CIGB-CC6 are presented in [Table 1](#).

Table 1. Main phenological and morphological characteristics of genotype CIGB-CC6

Genetic background		Incasoy 27 X Carolina-RP5
LEAVE		
Type		Pointed oval
Pubescence		Present
Pubescence color		Fawn
Leaflet size		Large
Leaf color		Dark green
STEM		
Type of growth		Semi-determined
Color of pubescence		Fawn
Height (cm) first pod		10 to 12
GRAINS		
Basic colour of the grain		Yellow-greenish
Thread colour		Brown
Weight of 1000 grains (grams)		132
Agronomic behaviour-climate		
Flowering (days)		30
Flower color		White
Sowing time		Spring-Summer, Winter (for Seeds)
Biological cycle (days to harvest))		80-100
Population density (plants ha ⁻¹)		300 000-400 000
Sowing distance (cm)		45 between rows 6-8 between plants
Harvest period		End August Early September and April
Potential yield (t ha ⁻¹)		3.0-5.0
Fat content (%)		18-20
Protein content (%)		35-37
Glyphosate resistance		Shows resistance to Glyphosate up to 10 L ha ⁻¹