

BRS Bonança: Upland rice cultivar

Evaldo Pacheco Sant'Ana¹; Orlando Peixoto de Moraes¹; Emílio da Maia de Castro¹; Elcio Perpétuo Guimarães^{*1}; Francisco Pereira de Moura Neto¹; Flávio Breseghello¹; José de Almeida Pereira²; Job Carneiro Wanderley³ and Nara Regina Gervine de Souza⁴

¹Brazilian Corporation for Agricultural Research, National Rice and Beans Research Center - Embrapa Rice & Beans, P.O. Box 179, CEP 75375-000 Santo Antonio de Goiás, GO, Brazil; ²Embrapa Mid-North; ³Rural Agency for the State of Goiás; ⁴State Enterprise for Research and Extension for the State of Mato Grosso (*Corresponding Author. E-mail: eguimara@cnpaf.embrapa.br)

ABSTRACT

BRS Bonança is an upland rice cultivar developed by Embrapa Rice and Beans and recommended for sowing in the states of Goiás, Maranhão, Mato Grosso, and Piauí. BRS Bonança average grain yields were higher than the checks; flowered 80 days after germination; presented good cooking quality and resistance to the main rice diseases.

KEY WORDS: *Oryza sativa*, cultivar characteristics, seed production.

INTRODUCTION

BRS Bonança is an upland rice cultivar developed from an inbred line introduced from the International Center for Tropical Agriculture (CIAT), registered and protected by the Embrapa Rice and Beans, a research center of the Brazilian Corporation for Agricultural Research. It was recommended for sowing in the states of Goiás, Maranhão, Mato Grosso, and Piauí, contributing to around 55% of the 2.5 million hectares of upland rice grown in Brazil, yearly. The inbred line which originated BRS Bonança was known as CNA 8172 in the yield trials were carried out from 1994/95 to 1997/98 cropping seasons.

PEDIGREE AND BREEDING METHOD

BRS Bonança (Figure 1) originated from the CT11614 (CT7244-9-2-1-52-1/CT7232-5-3-7-2-1P//CT6196-33-11-1-3-AP) cross made at CIAT, in Cali, Colombia. The inbred line was developed using the pedigree method with single plant selection from F₁ through F₅. In 1992, Brazilian scientists went to Colombia and selected 89 F₅ inbred lines, including the CT11614-1-4-1-M. These lines were introduced in Brazil, in 1993 following the Embrapa Genetic Resources and Biotechnology Center quarantine requirements. Observation trials were conducted

in 1993/94, using the Federer Augmented Design (Zimmermann, 1997). In 1994/95, the inbred line CT11614-1-4-1-M was subjected to evaluation in the Preliminary Yield Trials. From 1995/96 to 1997/98 it was further evaluated in 123 Advanced Yield Trials in several locations all over the country.

PERFORMANCE

BRS Bonança, in average, flowered 80 days after germination and yielded 4001, 2716, 3501 and 4172 kg.ha⁻¹, in Goiás, Maranhão, Mato Grosso and Piauí; representing 104.2, 97.4, 114.5 and 110.5% of the most productive check cultivars, respectively (Table 1). Its superior behavior was best expressed in the state of Mato Grosso, the most important upland rice-producing state in the country.

OTHER CHARACTERISTICS

BRS Bonança has long and translucent grains with high and stable milling quality. It cooks dry and fluffy due to its amilose content and intermediate gelatinization temperature. Its white belly is low (Table 2). All these characteristics meet consumers' requirements and other important agronomic traits such as resistance to lodging and tolerance to the most important rice diseases, like blast, grain discoloration and brown spot.

PEDIGREE SEED MAINTENANCE AND DISTRIBUTION

BRS Bonança breeder seeds are maintained by Embrapa Rice and Beans in Goiania, Goias,

Brazil. This is the first rice cultivar licensed to a group of Brazilian seed producers responsible for producing, marketing and selling certified seeds to rice farmers.

Table 1 - Performance (kg.ha⁻¹) of BRS Bonança, Primavera and Caiapó, upland rice cultivars, in the states of Goiás, Maranhão, Mato Grosso and Piauí, in 1997/98 and 1998/99.

| Cultivars | Goiás ¹ | Maranhão ¹ | Mato Grosso ² | Piauí ² |
|-------------|--------------------|-----------------------|--------------------------|--------------------|
| BRS Bonança | 4001 | 2716 | 3501 | 4172 |
| Primavera | 3442 | 2787 | 2993 | 3361 |
| Caiapó | 3835 | 1996 | 2626 | 3735 |

¹Average of 6 locations;

²Average of 9 locations.

Table 2 - Chemical and physical grain characteristics of the rice cultivar BRS Bonança compared to Primavera and Caiapó.

| Cultivars | Characteristics ¹ | | | | | | |
|-------------|------------------------------|-------|------|-----|-----|-----|-----|
| | Total | Whole | AC | GT | L | W | WB |
| BRS Bonança | 65.8 | 566 | 27.3 | 3.4 | 7.0 | 2.7 | 2,7 |
| Primavera | 66.2 | 46.8 | 26.3 | 4.9 | 3.0 | 1.7 | 2,3 |
| Caiapó | 68.0 | 60.0 | 26.2 | 3.9 | 5.3 | 4.0 | 2,6 |

¹Total = Percentage of total grain milled; whole = Percentage of whole grain; AC = Percentage of Amilose Content; GT = Index for gelatinization temperature; L = Length (mm); W = Width (mm); WB = White Belly.

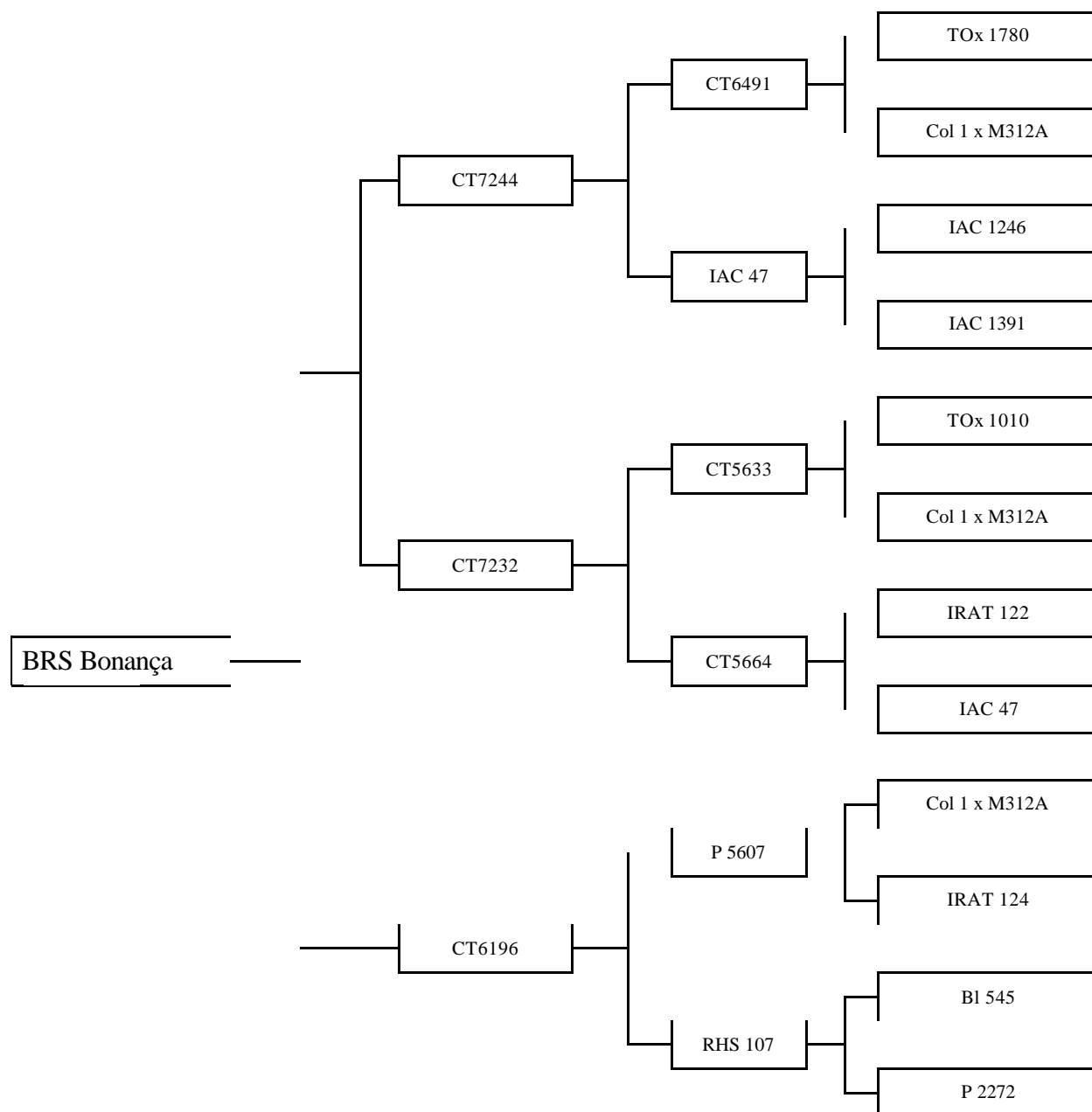


Figure 1 – Parents involved in the cross which originated the cultivar BRS Bonança.

REFERENCE

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