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CULTIVAR RELEASE
'BRS Horizonte': new bean variety of the carioca grain type for the southern and central western regions of Brazil

Leonardo Cunha Melo, Luis Claudio de Faria, Carlos Agustín Rava, Maria José Del Peloso, Joaquim Geraldo Cáprio da Costa, José Luiz Cabrera Díaz, Josias Correa de Faria, Heloisa Torres da Silva, Aloisio Sartorato, Priscila Zaczuk Bassinello, and Francisco José Pfeilsticker Zimmermann

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ABSTRACT *- BRS Horizonte was developed by Embrapa Rice and Beans and the International Central for Tropical Agriculture - CIAT and was released for the southern and central western regions of Brazil in view of its erect growth habit, earliness, good lodging resistance and resistance to five pathotypes of Colletotrichum lindemuthianum and to bean common mosaic virus.*

INTRODUCTION

Common bean is one of the most important Brazilian crops, with great social importance as main daily protein source. Due to the national demand for bean of the commercial carioca grain type, the common bean breeding program at Embrapa Rice and Beans has put great efforts into the development of new bean cultivars with this grain type associated to erect plant type and to disease and lodging-resistance.

CULTIVAR ORIGIN AND DEVELOPMENT

BRS Horizonte originated from the cross EMP 250 / 4/ A769 /// A 429 / XAN 252 // Pinto VI 114, performed at the International Central for Tropical Agriculture (CIAT) in Cali, Colombia and was designated line FEB 208. In 1999 the line was evaluated together with 37 other bean lines plus three controls in a National Bean Trial in seven different environments of the States of Goiás (1), Mato Grosso do Sul (2), Minas Gerais (3), and Espírito Santo (1). The joint analysis of grain yield data and other agronomic characteristics provided the elements to include line FEB 208 in the Regional Trial under the pre-commercial name CNFC 8202.

PERFORMANCE

Line CNFC 8202 was then evaluated in a field trial for cultivar release with eighteen other bean lines and two controls in a randomized complete block design (each plot consisted of four rows of 4 m) with four replications in 32 different environments in the States of Goiás (13), Federal District (4), Paraná (7) and Santa Catarina (8). In the field trial conducted during the wet and dry seasons in Santa Catarina and Paraná, and wet and winter seasons in Goiás and the Federal District, BRS Horizonte presented an average grain yield of 2362 kg ha^{-1}, not differing statistically from the average yield of the varieties Pérola, Eté and Iapar 81 used as control (Table 1).

OTHER CHARACTERISTICS

Technological and industrial grain quality

Besides the grain type carioca, BRS Horizonte has excellent cooking qualities and a higher protein content than the controls (Table 2).

Reaction to diseases

Under artificial inoculation cultivar BRS Horizonte was resistant to bean common mosaic virus and to the pathotypes 55 (lambda), 89 and 89 AS (alfa-Brazil), 95 (Kappa), and 453 (zeta) of *Colletotrichum lindemuthianum*. It presented an intermediary reaction to rust and was susceptible to angular leaf spot and common bacterial blight in field trials.

Plant type

BRS Horizonte presents an erect growth habit and good lodging resistance classifying it for mechanical harvest. Its growing cycle lasts between 75 and 85 days from emergency to physiological maturation, depending on the environmental conditions. Normally it is harvested earlier than the control variety Pérola.

SEED PRODUCTION

Genetic seed stocks are maintained by Embrapa Rice and Beans and basic seed is available at Embrapa Technology Transfer.

PARTNER INSTITUTIONS IN THE CULTIVAR ASSESSMENT

Embrapa Arroz e Feijão; Embrapa Cerrados; Embrapa Soja; Embrapa Negócios Tecnológicos - Escritório de Ponta Grossa; Agência Goiana de Desenvolvimento Rural e Fundiário; Universidade de Rio Verde/Fesurv; Avena S/C Ltda; Cooperativa Regional Agropecuária de Campos Novos; C. Vale Cooperativa Agroindustrial; Escola Agrotécnica Federal de Concórdia; Cooperativa dos Produtores de Sementes de Laranjeiras do Sul Ltda; Sementes Campo Verde; Universidade Estadual de Londrina; Cooperativa Agrícola Mista de Prudentópolis; Detec Assessoria Técnica S/C Ltda; Anastácio Ceregatti Sanchez Ltda. (Holambra Agrícola II); Cooperativa Regional Agropecuária de Taquarituba.

CONCLUSION

Owing to all afore mentioned advantages BRS Horizonte is one more option for bean producers who grow carioca grain type bean in the states Santa Catarina and Paraná in southern Brazil and the state of Goiás and the Federal District in the Central West.

Table 1. Mean yield of the dry bean cultivar BRS Horizonte in the State of Santa Catarina and Paraná from 2001 to 2003

Region	State	Season	BRS Horizonte (kg ha^{-1})	Control mean[1] (kg ha^{-1})	Relative yield (%)	Environment number
South	SC/PR	wet	2323	2279	102	10
		dry	2262	2330	97	5
Central West	GO/DF	wet	2239	2272	99	9
		winter	2771	3022	92	8
Mean			2362	2418	98	

[1] Iapar 81 and Pérola in Santa Catarina and Paraná, and Eté and Pérola in Goiás and the Federal District

Table 2. Technological grain quality of the carioca bean cultivar BRS Horizonte

Cultivar	Cooking time (minutes)	Protein (%)	100 grain weight (g)
BRS Horizonte	33	26.0	27.7
Pérola	29	21.3	26.6
Iapar 81	29	22.5	25.1