

## 'BRS PONTAL': NEW COMMON BEAN CULTIVAR WITH CARIOCA GRAIN TYPE

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The common bean breeding program strategy at Embrapa Rice and Beans is based on the demands of the participants of its agri-chain. Besides productivity increase, yield stability and the grain quality, the program also aims at the reduction of yield losses due to biotic and non biotic stresses. In Brazil, the traditional preference of bean consumption lies on grain of the carioca commercial type, what justifies the efforts in developing superior lines with this type of grain associated with the most common desirable commercial traits. Common bean needs to become more productive and competitive in the agricultural system to guarantee its sustainability in the Brazilian agribusiness. The development of new cultivars more productive and more resistant to non biotic and biotic stress, will turn it possible to farmers to get a more profitable crop with less environmental impact and, probably, will contribute for the consolidation of the common bean as consistent option for agricultural exploration.

The cultivar BRS Pontal was derived from the cross BZ3836 // FEB 166 / AN 910523 performed by Embrapa Rice and Beans. The F<sub>2</sub> and F<sub>3</sub> population was advanced in bulk. The F<sub>4</sub> population was planted at the Embrapa Rice and Beans, inoculated with the pathotype 89 of *Colletotrichum lindemuthianum* and only one pod/resistant plant was harvested to rebuild the plant population. In the F<sub>5</sub> generation it was used the same selection methodology; however, plants were harvested individually. From the F<sub>6</sub> families it was selected the line LM 95102774 on the basis of its productivity and disease resistance. In the year of 1997, LM 95102774 and 42 other lines were evaluated, in the National Bean Trial carried out in 11 environment, in 7 different Brazilian States [Goiás (2), Mato Grosso (1), Mato Grosso do Sul (3) Minas Gerais (1), Bahia (1), Pernambuco (2) and Espírito Santo (1)].

The joint analysis of yield and other agronomic traits allowed the line LM 95102774 be promoted to the Regional Bean Trial of 1999/2000. In this trial it was evaluated with 12 more lines and five checks, in a completely randomized block design with four replications using the recommended technologies for the different cultivation systems, in a total of 36 environments in the States of Goiás (13), Federal District (1), Minas Gerais (17), Mato Grosso (2) and Mato Grosso do Sul (3).

In the 36 regional trials, the line LM 95102774 outyielded the checks by 15,34% (Table 1). These data allowed its release in 2003 with the trade name BRS Pontal, for cultivation in the States of Goiás/ Federal District, Mato Grosso, Mato Grosso do Sul and Minas Gerais,. This new cultivar has a very uniform grain color, excellent cooking quality (Table 2) and the seeds averages 26.1 grams 100 seed<sup>-1</sup>. 'BRS Pontal' presents a semi-prostrate growth habit, low resistance to plant lodging in the majority of the bean production systems tested and requires 87 days from seedling stage to physiological maturity.

**Table 1.** Yield of the cultivar 'BRS Pontal' compared to the mean of control cultivars in the years 1999/2000.

Region	State	'BRS Pontal' (kg/ha)	Mean for controls <sup>1</sup> (kg/ha)	Relative yield (%)	Number of sites
Southeast	Minas Gerais	3014	2671	115.6	17
Center West	Goiás/Federal District	2747	2701	108.9	14
	Mato Grosso	1286	998	135.0	2
	Mato Grosso do Sul	2209	1735	131.0	3
Mean		2747	2455	115.3	

<sup>1</sup>Controls: Perola and Iapar 81.

Under artificial inoculation, the cultivar BRS Pontal showed to be resistant to the bean common mosaic virus and resistant, intermediate and susceptible to 11, 6 and 7 *C. lindemuthianum* pathotypes, respectively. In the field trials, it presented intermediate reaction to rust and common bacterial blight and was susceptible to angular leaf spot.

**Table 2.** Technological and industrial grain quality of the common bean cultivar 'BRS Pontal' compared to other cultivars of carioca grain type.

Cultivar	Cooking time (minutes)	Soluble solids (%)	Protein (%)
'BRS Pontal'	26.0	8.3	21.4
Perola	29.0	9.6	21.3
Iapar 81	29.0	9.4	21.0

BRS Pontal, is a new option for carioca bean growers in the States of Minas Gerais, Goiás/Federal District, Mato Grosso and Mato Grosso do Sul.

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

#### **Institutions of participating scientists:**

Embrapa Arroz e Feijão; Embrapa Milho e Sorgo; Embrapa Cerrados; Empaer-MT; Agenciarrural-GO; Universidade Federal de Viçosa; Universidade Federal de Lavras; Fesurv/Esucarv; Idaterra-MS; and TecAgro - Tecnologia em Agricultura Ltda.

#### **References:**

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