

## 'BRS REQUINTE': NEW COMMON BEAN CARIOCA CULTIVAR WITH DELAYED GRAIN DARKNESS

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Common bean constitutes the basic vegetal protein food in the Brazilian's daily diet, with a consumption, "in natura", of 16 kg/inhabitant/year. This leguminous crop is cultivated all year around, in several ecosystem diversities, in about 2,69 million ha, producing 2,34 million tons. These data classifies Brazil as the biggest common bean producer and consumer around the world. Usually, the Brazilian production has been enough in supplying the internal market, except for the black and white beans, which represent an average import of 80 and 20 thousand tons/year, respectively.

The Brazilian regions are well defined regarding to the preference for the type of grain, including traits such as size, color, form, shining, darkening and cooking quality. In Brazil, carioca is the most demanded grain type, representing around 70% of the total bean consumption. One of the greatest problems faced by the carioca grain type producers is the fast darkening of the grain tegument, economically depreciating the product and impeding its storage for long periods, what is a great disadvantages for the farmer.

The cultivar BRS Requite was derived from the cross Carioca MG//POT 947/AN 910523 accomplished by Embrapa Rice and Beans. The F<sub>2</sub> to F<sub>4</sub> population was advanced in bulk. The F<sub>5</sub> population was planted at Embrapa Rice and Beans, inoculated with the pathotype 89 of *Colletotrichum lindemuthianum* and individual plant selections were made based on earliness, plant vigor and disease reaction. From the F<sub>6</sub> families it was selected the line LM 95102682 on the basis of its productivity, architecture and disease resistance.

In the year of 1997, LM 95102682 and 42 other lines were evaluated, in the National Bean Trial carried out in 11 environment, in the Brazilian States of 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 95102682 be promoted to the Regional Bean Trial of 1999/2000. In this trial it was evaluated with 12 other 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 29 environments in the States of Goiás (10), Federal District (1), Minas Gerais (13), Mato Grosso (2) and Mato Grosso do Sul (3).

In the 29 regional trials, the line LM 95102682 outyielded the checks by 8,4% (Table 1). These results allowed its release in 2003 with the trade name BRS Requite, for cultivation in the States of Goiás/Federal District, Mato Grosso, Mato Grosso do Sul and Minas Gerais, during the dry and winter seasons. This new cultivar has a very uniform grain color, excellent cooking quality (Table 2) and the seeds averages 24.0 grams 100 seed<sup>1</sup>. BRS Requite presents the advantage of keeping grain tegument color with no major alterations for a longer period of time when compared with the checks.

This cultivar 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 Requite compared to the mean of control cultivars in the years 1999 and 2000.

Region	State	'BRS Requite' (kg/ha)	Mean for controls <sup>1</sup> (kg/ha)	Relative yield (%)	Number of sites
Southeast	Minas Gerais	3069	2820	110.3	13
	Goiás/Federal District	2797	2818	100.5	11
Center West	Mato Grosso	1381	1259	114.7	2
	Mato Grosso do Sul	1997	1735	120.7	3
Mean		2709	2574	108.4	

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

Under artificial inoculation, the cultivar BRS Requite showed to be resistant to the bean common mosaic virus and resistant, intermediate and susceptible to 9, 7 and 8 *C. lindemuthianum* pathotypes, respectively. In the field trials, it was susceptible to angular leaf spot, rust and common bacterial blight.

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

Cultivar	Cooking time (minutes)	Soluble solids (%)	Protein
BRS Requite	22.0	10.0	20.1
Perola	29.0	9.6	21.3
Iapar 81	29.0	9.4	21.0

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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