



## 'BRS Pitanga': new dry bean variety of the small purple group

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**ABSTRACT** - The new BRS Pitanga cultivar of the small purple commercial group was released for cultivation in the State of Goiás and the Federal District. The cultivar has an erect plant growth habit and is resistant to four pathotypes of the causal agent anthracnose, to rust and to the bean common mosaic virus.

### INTRODUCTION

Bean production in Brazil oscillated between 1.97 and 2.77 million tons year<sup>-1</sup> between 1994 and 2003. Last year it reached 3.0 million tons, supplying practically the entire Brazilian population's needs. In Brazil beans are part of the daily staple diet of the population and occupy a vast production area cultivated predominantly by smallholders. Demands of Brazilian consumers vary regionally in relation to grain color, shape and size. In view of this demanding market the genetic bean improvement program of Embrapa Rice and Beans is developing new genotypes of the small purple commercial bean group with high yield, earliness, erect plant growth habit, and disease resistance.

### CULTIVAR ORIGIN AND DEVELOPMENT

'BRS Pitanga' was the product of a single cross between FEB 163 and AN512879, performed at Embrapa Rice and Beans. The bulk method was used from the F<sub>2</sub> to F<sub>4</sub> generations with selection for commercial purple grain type. In the F<sub>5</sub> generation plants were selected for

commercial purple grain type and harvested individually. Line LM 95105718 was selected from the F<sub>6</sub> families for its productivity, erect plant growth habit and disease resistance. In 1997, this line was evaluated together with 27 other bean lines and two controls in National Trials in eight different environments of the states of Goiás (2), Mato Grosso (1), Mato Grosso do Sul (2), Minas Gerais (1), Bahia (1), and Espírito Santo (1). The joint analysis of data of grain yield and other agronomic characteristics promoted the inclusion of LM 95105718 in the Regional Trial under the pre-commercial name CNFR 7866.

### PERFORMANCE

In the growing season of 1999/2000 this line was evaluated with eight other bean lines and two controls in a randomized complete block design with four replications (each plot consisted of 4 rows of 4m) in 10 different environments in the state of Goiás (9) and the Federal District (1). In 10 Regional Trials, conducted during the dry and winter seasons in the State of Goiás and Federal

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District, line CNFR 7866 presented the same mean yield as the control cultivars (Table 1).

### OTHER CHARACTERISTICS

#### Industrial and technological grain quality

'BRS Pitanga' presents uniform grain size and color, a very important characteristic for the purple grain group, outstanding cooking qualities and an excellent aspect after cooking (Table 2).

#### Reaction to diseases

Under artificial inoculation cultivar 'BRS Pitanga' was resistant to bean common mosaic virus and to the pathotypes 55 (lambda), 89 (alfa-Brazil), 95 (kappa), and 453 (zeta) of *Colletotrichum lindemuthianum*, the causal agent of anthracnose. In field trials it was rust-resistant, moderately resistant to angular leaf spot and susceptible to common bacterial blight.

#### Plant type

'BRS Pitanga' presents an erect growth habit in all tested environments and good lodging resistance throughout the growing cycle (mean of 83 days from emergency to physiological maturity). 'BRS Pitanga' is a new option for

bean producers who plant the small purple grain type due to its excellent cooking qualities, erect plant growth habit and lodging and disease-resistance. The cultivar was released for the state of Goiás and Federal District.

### 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 EVALUATION

Embrapa Arroz e Feijão; Embrapa Cerrados; Agência Goiana de Desenvolvimento Rural e Fundiário; Universidade de Rio Verde/Fesurv.

### CONCLUSION

'BRS Pitanga' cultivar of the small purple commercial group was made available for cultivation in the state of Goiás and the Federal District. It has an erect plant growth habit and is resistant to four pathotypes of the anthracnose causal agent as well as to rust and bean common mosaic virus.

Table 1. Mean yield of 'BRS Pitanga' compared to the mean yield of the best two control cultivars in the Regional Trials of 1999/2000

Region	Season	BRS Pitanga (kg ha <sup>-1</sup> )	Control mean <sup>1</sup> (kg ha <sup>-1</sup> )	Relative yield (%)	Environment number
GO	dry	1541	1632	94.4	3
DF	winter	2282	2261	101.0	7
Mean		2059	2072	99.4	-

<sup>1</sup> 'Roxo 90' and 'Safira'

Table 2. Industrial and technological grain qualities of the purple bean BRS Pitanga compared to variety Roxo 90

Variety	Cooking time (minutes)	Soluble solids (%)	Protein content (%)	Protein content (%)	100 grain weight (g)
BRS Pitanga	21.0	9.3	9.3	21.5	20.3
Roxo 90	26.0	9.5	9.5	-	23.1