BRS AGRESTE - NEW BEIGE SEEDED COMMON BEAN CULTIVAR WITH ERECT PLANT TYPE AND HIGH YIELD POTENTIAL

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INTRODUCTION

The Brazilian bean consumer is demanding for bean culinary quality and grain type. Besides, in the Northeast region, there is a demand for the beige bean seed coat color. In this area bean takes over an expressive socioeconomic importance due to its widespread cultivated area and for offering, to the low income population, a low cost vegetable protein. To attend this demand, Embrapa Rice and Bean is releasing the BRS Agreste bean cultivar for the States of Sergipe, Alagoas, Bahia, Goias and Federal District, enabling the farmers to offer a better quality product to the final consumer and to obtain better revenue with this crop.

Origin and cultivar development

BRS Agreste was obtained in the bean breeding program of Embrapa Rice and Bean, in 1993, from the single cross between CB 912052 and AN 9022180. From F2 to F5 generations plants were inoculated in the field with pathotypes 55, 89, 95, 453 and 585 of *Colletotrichum lindemuthianum* and selected by the modified mass selection method when the susceptible plants were eliminated. In F5 the remaining resistant plants were harvested individually giving origin to families in the F6 generation which were then inoculated under artificial conditions with the same five races of the pathogen. The resistant lines were evaluated in the field, for architecture, lodging, yield and post-harvest grain type. Among those lines LM 96200224 was selected for preliminary evaluation trials (EPL). In the year of 1999, this line was evaluated in the Preliminary beige seeded trials and in 2001 in the Intermediary beige seeded trials. This line was then tested in the Regional trials (VCU) in 48 different environments together with 10 other lines and three controls, in a randomized complete block design with three replications (each plot consisted of four rows of 4 m). All recommended technologies used in the State of Goias, Sergipe, Alagoas, Bahia and Federal District were used. The joint analysis of grain yield data and other agronomic characteristics provided the elements to promote the line to be selected with the pre-commercial denomination of CNFM 7958.

RESULTS

Yield

In 48 Regional trials (VCU), from 2003 to 2007, conducted during the rainy and dry (under irrigation) sowing seasons in the State of Goias and in the Federal District and in the rainy sowing season in the States of Sergipe, Alagoas and Bahia, the line CNFM 7958 showed to be 5.2% superior in an average yield when compared to the average yields of the controls BRS Marfim, Corrente and IPA 6 (Table 1).

Table 1. Yield of BRS Agreste cultivar in the States of Goias (GO), Sergipe (SE), Alagoas (AL), Bahia (BA) and Federal District (DF) compared with control averages in the Regional trials (VCU) from 2003 to 2007.

State	Sowing season	BRS Agreste average yield (kg/ha)	Control average yield (kg/ha)	Relative yield (%)	Number of tested environment
GO/DF	wet	2.585	2.589	99.8	8
GO/DF	winter	2.366	2.706	87.4	13
SE/AL/BA	wet	2.259	2.091	108.0	27
Total average yield		2.342	2.227	105.2	48

Morphophysiologic, technologic and industrial characteristics

This cultivar presents an erect growth habit, a growing cycle from sowing to maturity of 75 to 85 days, 41 days to flowering, white flower, yellow to light red pods at maturity, beige grain color with no brightness and resistance to lodging. Besides BRS Agreste have a very uniform grain color and size, 100 grain weight of 25 g and cooking time of 32 minutes (Table 2).

Table 2. Technological and industrial grain qualities of BRS Agreste cultivar compared to the controls BRS Marfim and IPA 6.

Cultivar	Cooking time (min.)	Protein (%)	100 grain weight (g)
BRS Agreste	32	21	25
BRS Marfim	28	17	27
IPA 6	27	19	24

Disease reaction

Under artificial inoculation BRS Agreste was resistant to Bean common mosaic virus and to the pathotypes 23, 55, 71, 89, 89-AS, 95, 127, and 453 of *Colletotrichum lindemuthianum*, the causal agent of anthracnose. In the field trials it showed a intermediary reaction to angular leaf spot and was susceptible to Bean golden mosaic virus.

CONCLUSION

Due to its erect plant type, high yield potential and resistance to anthracnose, the common bean cultivar BRS Agreste with beige grain color is recommended to be cultivated during rainy and dry (under irrigation) seasons in the State of Goias and Federal District and in the rainy season in the States of Sergipe, Alagoas and Bahia.

Institutions involved in the cultivar evaluation:

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