

PERFORMANCE OF THE CRANBERRY BEAN "BRS RADIANTE" IN BRAZIL

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The most popular common beans consumed in Brazil are represented by small-seeded varieties presenting, mostly, carioca or black grain types and, to a lesser extent, by the beige, pink and purple colored grain types. Some medium and large seeded beans are produced regionally and offered in local markets at higher prices. The production of these bean types, very well accepted in the international market, may contribute to diversify product availability to the Brazilian consumers as well as for exportation, in case of production surplus.

Line PR 93201472, developed at Embrapa Arroz e Feijão, belong to the cranberry bean class and is characterized by high yield potential, erect plant type, wide adaptation, earliness, good grain quality and resistant to lodging. It was released in 2002, denominated as BRS Radiante, and recommended for cultivation in the States of Goiás/Distrito Federal, Mato Grosso do Sul and Minas Gerais.

BRS Radiante was derived from a simple cross between Pompadour and Iraí. It was conducted in bulk from F₂ to F₃ generations and in F₄ plant population was inoculated with pathotype 89 (alfa Brasil) of *Colletotrichum lindemuthianum*. Susceptible plants were eliminated and one pod per plant was harvested from the resistant plants to compose the following generation (F₅) when the same selection procedure (single pod descent) was performed to compose the F₆ families. Plant selection was performed in F₆ based on yield and erect plant type, originating line PR 93201472 that demonstrated superior grain yield (4.6%) as compared to the local check varieties (Table 1). In addition, BRS Radiante presents uniform grain appearance, seed weight around 43.5 g and excellent cooking and eating characteristics (Table 2).

Under artificial inoculation BRS Radiante was resistant to common bean mosaic virus and to anthracnose pathotypes: 89 (alfa Brasil); 585 (alfa Brasil TU susceptible); and 95 (capa). Under field conditions it showed intermediate reaction to rust and was tolerant to powdery mildew, but susceptible to common bacterial blight and angular leaf spot.

Table 1. Grain production of BRS Radiante compared to local checks (average from 14 trials) from 1997 to 1998.

Region	State	BRS Radiante (kg ha ⁻¹)	Checks* (kg ha ⁻¹)	Relative yield (%)	Number of testing sites
Southeast	Minas Gerais	2.601	2.559	101.6	4
	Goiás/Distrito Federal	2.877	2.720	105.8	5
Central West	Mato Grosso do Sul	1.697	1.586	107.0	5
Mean		2.440	2.332	104.6	

*Local checks: Iraí and Roxo 90.

Table 2. Cooking and nutritional quality of the BRS Radiante.

<i>Cultivar</i>	Cooking time (minutes)	Water absorption (%)	Soluble solutes (%)	Non cracked grains (%)	Broth color	Protein (%)
BRS Radiante	38,10	103,9	9,4	98	Purple	19,4

With a maturation period of 80 days, erect plant type and lodging resistance in a variety of cropping systems, soil types and planting seasons, according to results obtained in all trial sites, BRS Radiante presents an interesting option for producers. Genetic seed stocks are maintained by Embrapa Arroz e Feijão and basic seed is available at Embrapa Negócios para Transferência de Tecnologia.

Participating scientists and institutions are:

Embrapa Research Units: Arroz e Feijão; Milho e Sorgo; Cerrados; Negócios para Transferência de Tecnologia/ENT de Sete Lagoas and Goiânia;

State Organizations: Empresa de Pesquisa, Assistência Técnica e Extensão Rural de Mato Grosso do Sul (Empaer/MS); Agência Goiana de Desenvolvimento Rural e Fundiário (Agenciarrural); Cooperativa Agropecuária da Região do Piratinga Ltda. (Coopertinga);

Universities: Universidade Federal de Viçosa; Fundação de Ensino Superior de Rio Verde (Fesurv/Esucarv).

Reference

1. Faria, L.C. de, M.J. Del Peloso, J.G.C Costa, C.A. Rava, G.E. de S. Carneiro, D.M. Soares and J.L. Cabrera Diaz. 2000. BRS Radiante: nova cultivar de feijoeiro comum com tipo de grão rajado. Goiânia, Embrapa Arroz e Feijão. (Comunicado Técnico, 45).