



‘BRSMG Talismã’: common bean cultivar with Carioca grain type

Ângela de Fátima Barbosa Abreu^{1*}, Magno Antônio Patto Ramalho², José Eustáquio de Souza Carneiro³, Flávia Maria Avelar Gonçalves², João Bosco dos Santos², Maria José Del Peloso¹, Luís Cláudio de Faria¹, Geraldo Estevam de Souza Carneiro⁴, and Israel Alexandre Pereira Filho⁵

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ABSTRACT - ‘BRSMG Talismã’ is originated from a recurrent selection program based on a population performed in 1990. This work led to the selection of line CII-102, released under the trade mark ‘BRSMG Talismã’ in 2002 in the State of Minas Gerais and registered in 2003 for Paraná State.

Key words: *Phaseolus vulgaris*, plant breeding, cultivar description, seed production.

INTRODUCTION

Common bean is cultivated all year long in different ecosystems in Brazil, across about 2.69 million ha, producing a grain yield of 2.34 million tons. It represents the basic vegetal protein in the diet of Brazilian people, amounting to an *in natura* consumption of 16 kg inhabitant⁻¹ year⁻¹. Largest producer states are Paraná and Minas Gerais, coming up for 37.7% of the national production (CONAB 2004). The carioca commercial grain type is traditionally preferred in Brazil.

CULTIVAR ORIGIN AND DEVELOPMENT

The BRSMG Talismã cultivar is result of a network program between the Federal University of Lavras, Federal

University of Viçosa, the Brazilian Corporation for Agricultural Research (Embrapa Rice and Beans), and the Agricultural State Enterprise of Minas Gerais (Epamig). This cultivar was released in 2002 for Minas Gerais and registered for Paraná in 2003. The Department of Agriculture identified it with the protection certificate 00442 and the register number 11460.

‘BRSMG Talismã’ is originated from a recurrent selection program based on a population performed in 1990 including BAT 477, IAPAR 14, FT 84-29, Jalo EEP, A 252, A 77, Ojo de Liebre, ESAL 645, Pintado, and Carioca, crossed in a complete diallel scheme. In F₂, 2000 seeds were evaluated in the generations S_{0:1} and S_{0:2}, leading to the selection of 13 families. These were recombined by intercrossing and, following the same previous scheme, 18 families of the first cycle were selected. These families were intercrossed and

¹Núcleo de Desenvolvimento de Cultivares de Feijão, Embrapa Arroz e Feijão, C. P. 179, 75375-000, Santo Antônio de Goiás, GO, Brasil.
*E-mail: afabreu@ufla.br

²Departamento de Biologia, Universidade Federal de Lavras (UFLA), C. P. 37, 37200-000, Lavras, MG, Brasil

³Departamento de Fitotecnia, Universidade Federal de Viçosa, 36570-000, Viçosa, MG, Brasil

⁴Embrapa Soja, C. P. 231, 86001-970, Londrina, PR, Brasil

⁵Embrapa Milho e Sorgo, C. P. 151, 35701-970, Sete Lagoas, MG, Brasil

available in $S_{0:1}$, $S_{0:2}$, $S_{0:3}$ and $S_{0:4}$ at three sites in the State of Minas Gerais. Upshot of this selection was the line CII-102 (Ramalho et al. 2002).

PERFORMANCE

From 1998 to 2001, line CII-102 was compared with two controls (‘Carioca’ and ‘Pérola’) in three different seasons (rainy, dry, and winter/irrigated) including 25 environments in Minas Gerais, presenting 10.6% higher grain yields than the control cultivars. In 2000 and 2001, line CII-102 was also assessed with the same control cultivars in the rainy and dry

seasons in 10 environments in Paraná State, exceeding the control yields by 20.9% (Table 1).

OTHER CHARACTERISTICS

Technological and industrial grain quality

‘BRSMG Talismã’ is of uniform grain size and carioca color type (beige with light brown stripes), has a mean mass of 100 grains of 26.5g, an excellent cooking quality, and an appealing appearance after cooking (Table 2).

Table 1. Yield of cultivar BRS MG Talismã compared to mean grain yields of control cultivars from 1998 to 2002 in Minas Gerais and Paraná States

State	Cropping seasons	Number of sites	BRSMG Talismã	Control Carioca	Control Pérola	Relative yield — % —
Minas Gerais	Rainy season	8	2192	1845	1875	117.8
	Dry season	12	2198	2043	2034	107.8
	Winter/irrigated	5	3311	2982	3146	108.1
	Mean	25	2418	2167	2206	110.6
Paraná	Rainy season	7	2480	1874	2022	127.3
	Dry season	3	1731	1618	1736	103.2
	Mean	10	2256	1797	1936	120.9
General mean			2372	2062	2129	113.2

Table 2. Grain technological and industrial quality

Cultivar	Cooking time — minutes —	Soluble solids — % —	Protein — % —
BRSMG Talismã	28.5	9.8	23.8

Reaction to diseases

Under artificial inoculation, ‘BRSMG Talismã’ showed resistant reaction to the bean common mosaic virus and to 65 and 89 *Colletotrichum lindemuthianum* pathotypes. In field trials, it showed intermediate reaction to angular leaf spot.

Plant type and resistance to lodging

‘BRSMG Talismã’ has semi-prostrate to prostrate plant architecture under the evaluated conditions of soil and climate. Its resistance to lodging is low, and the growing cycle varies in the mean from 75 to 85 days from emergence to physiological maturity, which is earlier than Pérola and Carioca cultivars.

SEED PRODUCTION

Genetic seed stocks are maintained by the Federal University of Lavras and foundation seed is available at Embrapa Technology and Transfer.

PARTNER INSTITUTIONS IN THE CULTIVAR ASSESSMENT

Universidade Federal de Lavras; Embrapa Arroz e Feijão; Embrapa Milho e Sorgo; Universidade Federal de Viçosa; Iapar - Instituto Agronômico do Paraná; Embrapa Soja; Embrapa Negócios para Transferência de Tecnologia/ Escritório de Negócios de Ponta Grossa.

CONCLUSION

Due to its superior yield potential, together with an excellent cooking performance, resistance to major diseases, and earliness, ‘BRSMG Talismã’ is an interesting option for producers in the States of Minas Gerais and Paraná who work with the carioca grain type.

REFERENCES

- Ramalho MAP, Abreu AFB, Carneiro JES, Gonçalves FMA, Santos JB, Peloso MJ, Faria LC, Carneiro GES and Pereira Filho IA (2002) **O Talismã de sua lavoura de feijoeiro**. Embrapa Arroz e Feijão, Santo Antônio de Goiás, 4p. (Comunicado Técnico 36).
- CONAB (2004) <http://www.conab.gov.br>. Assessed in 12 january 2004.