

BRSMG MAJESTOSO: ANOTHER CARIOCA GRAIN TYPE BEAN CULTIVAR FOR THE STATE OF MINAS GERAIS

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Bean yield in the state of Minas Gerais is increasing and this state, since 2005, became the major dry bean production in Brazil. However, production in this state is still unstable due to a series of factors including the diversity of management systems and the biotic stresses. In relation to the diversity management systems the state of Minas Gerais presents since the small subsistence farmers that use little technology until the great rural business farmers that adopt all the available technology. Among the biotic stresses, bean diseases play an important role. *Colletotrichum lindemuthianum* and *Phaeoisariopsis griseola*, the causal agents of anthracnose and angular leaf spot, respectively, have been one of the most bean diseases in the state of Minas Gerais. The most economic way to control these diseases is the use of resistant cultivars. However, as pointed out in the literature these pathogens present numerous pathotypes, making the useful life of these cultivars very short. In such a situation the bean breeding programs must be dynamic, releasing to the farmers new bean cultivars with different resistant alleles. Before the releasing of such cultivars they have to be tested in a majority of environment. It is with these objectives that the Universidade Federal de Lavras, (UFLA), Universidade Federal de Viçosa (UFV), Embrapa Arroz e Feijão (CNPAF) and Empresa de Pesquisa Agropecuária de Minas Gerais (Epamig), have been evaluating new cultivars. As a result of this effort it has been released the BRSMG Majestoso as a new carioca grain type bean cultivar to the farmers of the state of Minas Gerais.

BRSMG Majestoso is originated from the cross between Ouro Negro, a black bean cultivar and Pérola, a carioca grain type cultivar. Crosses were performed at the UFLA Biology Department where the F₃ seeds were obtained. From the F₃ population 398 plants were selected all with carioca grain type. These plants were evaluated in the F_{3:4} and F_{3:5} progenies in Lavras and Patos de Minas and 10 of them were selected to be evaluated in different trials. Based on the results of these experiments line OP-NS 331 were selected to participate in the Use and Cultivation Values trials from 2002 to 2004. These trials was performed in 43 environments in the state of Minas Gerais (Table 1) using cultivars BRS Talismã and Pérola as control together with other 17 lines in a complete randomized block design with three replications.

Cultivar BRSMG Majestoso presents a type III indeterminate habit growth. Its lodging and plant type are very similar to the control Pérola, the most cultivated cultivar in the state of Minas Gerais (Table 1). Besides, it is resistant to the pathotypes 55, 89, 95 and 453 of

Colletotrichum lindemuthianum and to bean common mosaic virus and, under field conditions, presented an intermediary reaction to *Phaeoisariopsis griseola*. The 43 environments used to test the VCU trials included several regions in the state of Minas Gerais and the three planting dates (wet season, dry season and fall-winter season). In almost all of them the average yield of cultivar BRSMG Majestoso was superior than the average yield of the controls Pérola and BRSMG Talismã (Table 1), showing its wider adaptation. The overall average yield of BRSMG Majestoso was 11,3% higher than the two controls. In the bean quality test, cultivar BRSMG Majestoso besides of the carioca grain type, which is very important for the market, also presented excellent cooking quality, with a cooking time inferior to both BRS Talismã and Pérola (Table 1).

Due to its high average yield, superior grain quality, resistance to anthracnose and a lower susceptibility to angular leaf spot the cultivar BRSMG Majestoso is another carioca common bean type option for the farmers of the state of Minas Gerais.

Institutions involved in the cultivar evaluation:

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Table 1. Some biological and physical characteristics of cultivars BRSMG Majestoso and the controls Pérola and BRSMG Talismã.

Characteristic	BRSMG Majestoso	Pérola	BRSMG Talismã
Plant type	5,2	5,3	5,9
Lodging	5,2	5,4	6,0
Flowering	42,0	45,0	42,0
Maturation	87,0	88,0	84,0
Angular leaf spot	3,0	3,6	4,2
Cooking time	27,0	31,0	31,0
Soluble solids	8,9	10,6	11,0
Protein	23,0	21,3	23,8
100 grain weight	30,6	29,0	26,0
Average yield (kg/ha)	2413,0	2138,0	2199,0