



Jalo MG-65 – Common bean cultivar

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Received 19 March 2004

Accepted 24 July 2004

ABSTRACT - *Jalo MG-65 is a large-seeded common bean cultivar with indeterminate growth habit (type III) released for planting in Minas Gerais State. It belongs to the Jalo class (yellow seeds) and has a high yield potential. Usually, it is ready for harvesting within 70-80 days. It is resistant to fusarium wilt and moderately resistant to rust, angular leaf spot, alternaria leaf spot, and powdery mildew.*

INTRODUCTION

More than 80 cultivars and lines of large-seeded common bean (*Phaseolus vulgaris* L.) have been evaluated by EPAMIG since 1993 (Vieira et al. 1997, Vieira et al. 2000, Vieira et al. 2001, Vieira et al. 2002), mainly such that belong to the Jalo (yellow seeds) and Cranberry classes. As a result of these studies, two cultivars were released by 1999: Novo Jalo and Diacol Calima. Jalo MG-65 is the newest Jalo class cultivar to be released from this program. It was released for farmers in 2003, after one greenhouse (2001) and two field multiplications (2002). This bean class, as well as the Cranberry class, is the most cultivated large-seeded bean in Minas Gerais State and, in general, its achieved higher prices than the black and carioca classes. Nowadays, the most cultivated Jalo class cultivar in Minas is 'EEP 558', released decades ago, which is still being tolerated for planting. The more recently released cultivar Novo Jalo was not well accepted by the farmers because its seed color darkens very quickly after harvest. Jalo MG-65 was tested in 16 trials of Jalo class cultivars in six municipalities of Minas Gerais State during 1999 and 2000, especially in the region Zona da Mata.

Except for one trial installed in December, the others were installed between February and August and were sprinkle-irrigated. A total of 25 entries from the germplasm collection of Embrapa Rice and Beans were tested. For comparison, the cultivars EEP 558, Novo Jalo, and Pérola were included in the trials. Fungicide was not applied to the plants in most trials.

PEDIGREE AND BREEDING METHODS

Jalo MG-65 was collected by Embrapa Rice and Beans in the county of Mata Grande, Alagoas, in 1988, and was registered in the germplasm bank as CF 880065. In February 1998, seeds of this cultivar were treated with the fungicide benomyl and sown in an area where beans had not been cultivated for two years to guarantee that the harvested seeds would be free of the fungus *Colletotrichum lindemuthianum*. Approximately 30 plants of similar characteristics were individually harvested. After threshing the plants, seeds from each plant of similar shape and color were mixed. These seeds were resown in July 1998, and the cultivar was included in the Jalo class trials. Because of the similarity between Jalo

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MG-65 and Jalo EEP 558 regarding plant morphology and disease resistance, a molecular evaluation was performed (Figure 1). Primer AE19 revealed the presence of two RAPD markers indicated by arrows that differentiate ‘Jalo MG-65’ from ‘Jalo EEP 558’.

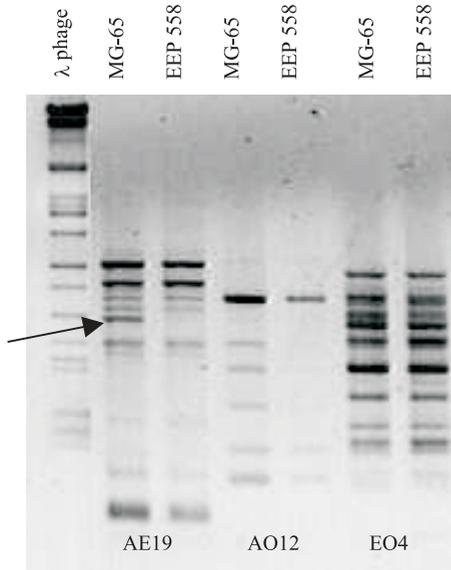


Figure 1. Electrophoretic analyses of DNA amplification products obtained with the RAPD primers AE19, AO12, EO4. Lanes are as follows: lambda phage DNA digested with *EcoRI*, *HindIII*, and *BamHI* (size markers), ‘Jalo MG-65’, and ‘Jalo EEP 558’.

PERFORMANCE

‘Jalo MG-65’ yielded an average of 2063 kg ha⁻¹ in 16 trials conducted at different planting dates in six municipalities of Minas Gerais State. The maximum yield (3411 kg ha⁻¹) was achieved in a trial installed in Leopoldina in August 1999. On average, it yielded 11% more than cultivar EEP 558, 9% more than ‘Novo Jalo’, and 2.4% less than ‘Pérola’.

OTHER CHARACTERISTICS

‘Jalo MG-65’ flowers between 28 and 37 days after emergence (DAE) and is usually ready for harvesting within 70-80 DAE. It has an indeterminate growth habit (type III). Flowers are pink, and the pod color changes from cream during maturation to yellow brownish at the ripe stage. Weight of one hundred seed varies from 30.7 to 48.9 g (Vieira et al. 2002). The seeds are yellow and there is a brown spot around the hilum. The cultivar is fusarium wilt-resistant (Pereira et al. 2002) and moderately resistant to rust, angular leaf spot, alternaria leaf spot, and powdery mildew (Vieira et al. 2002).

PEDIGREE SEED MAINTENANCE AND DISTRIBUTION

The ‘Jalo MG-65’ seed is maintained by Minas Gerais Corporation for Agricultural Research (Epamig), Vila Gianetti, 47, 36571-000, Viçosa, MG, Brazil.

Table 1. Means of grain yield (kg ha⁻¹) of ‘Jalo MG-65’ and control cultivars in 16 trials conducted in Minas Gerais State, Brazil

Municipalities	Number of trials	‘Jalo MG-65’	‘EEP 558’	‘Novo Jalo’	‘Pérola’
Coimbra	7	1758	1589	1519	1757
Leopoldina	4	2609	2353	2514	2766
Ponte Nova	2	2360	1970	2129	1535
Felixlândia	1	2204	2112	2644	2854
Patos de Minas	1	2.121	1883	1871	2229
Viçosa	1	2629	2350	2228	3937
Mean		2063	1858	1893	2113

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