

CARNAVAL - Common bean cultivar

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ABSTRACT

Carnaval is an early (65 to 85 days) large-seeded determinate growth habit common bean cultivar released for sowing in Minas Gerais State. It belongs to the Cranberry class, with broad adaptation and resistance to lodging, and shows high yield potential. It is resistant to fusarium wilt; moderately resistant to anthracnose, rust, and common bacterial blight; and it is moderately susceptible to angular leaf spot, alternaria leaf spot, and powdery mildew.

KEY WORDS: *Phaseolus vulgaris*, cranberry class, cultivar description, seed production.

INTRODUCTION

Cultivars and lines of large-seeded common bean (*Phaseolus vulgaris* L.) have been evaluated by Epamig and UFV since 1993 (Vieira et al., 1997, 2000, 2001). As a result of these studies, by 1999 two cultivars have been released: Novo Jalo (Epamig, 1993) and Diacol Calima (Epamig, 1999). Carnaval is the newest cultivar to be released from this program. It belongs to Cranberry class which is, after the “jalo” commercial group, the large-seeded bean most cultivated in Minas Gerais State. In general, Cranberry class grains are higher priced than grains of the “carioca” commercial group, responsible for 70% of beans produced in Brazil. Carnaval was tested in 14 trials of large-seeded cultivars and lines, mainly of Cranberry class, in seven municipalities of Minas Gerais State during 1999 and 2000. A total of 20 entries from “Centro Internacional de Agricultura Tropical” (CIAT), the Brazilian Corporation for Agricultural Research (Embrapa), UFV, and from commercial sources were tested. In most of the trials fungicide was not applied to the plants. In 2001, Carnaval was submitted to the National Service for Cultivar Protection of the Ministry of Agriculture for registration and protection.

PEDIGREE AND BREEDING METHODS

Carnaval was collected at the farmers’ open market in Poços de Caldas, Minas Gerais State, in August 1997. In February 1998, seeds of this cultivar were treated with the fungicide benomyl and sowed 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 plants were threshed, 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 Cranberry class trials.

PERFORMANCE

Characterized as an early maturing cultivar, Carnaval yielded an average of 1,909 kg/ha in 14 trials conducted within different planting dates in seven municipalities of Minas Gerais State (Table 1). The maximum yield achieved by Carnaval was 4,342 kg/ha, in a trial installed in Ponte Nova in March 1999. On average, it yielded 21% less than Pérola (“carioca” commercial group) which has a normal life cycle (Table 1). Carnaval yielded as much as Diacol Calima (not belonging to Cranberry class), a cultivar of intermediate life cycle, released for cultivation in Minas Gerais State in 1999 (EPAMIG, 1999). Carnaval was more productive than many Cranberry class lines obtained from CIAT and cultivars such as Ceasa and Pintado which were collected in open markets (Table 1).

OTHER CHARACTERISTICS

Carnaval has determinate growth habit, a height of 40-50 cm and is resistance to lodging. It flowers between 29 days (summer) and 43 days (winter) after sowing and is usually ready for harvesting after 65-85 days. Flowers are pink, and ripe pods are yellow

Table 1. Grain yield (kg/ha) of Carnaval and control cultivars in 14 trials conducted in Minas Gerais State, Brazil.

Cultivars (life cycle) ^{1/}	Municipalities								General Mean
	Leopoldina ^{2/}	Coimbra ^{3/}	Coimbra ^{4/}	Ponte Nova ^{5/}	Viçosa ^{6/}	Patos de Minas ^{7/}	Lavras ^{8/}	Felixlândia ^{9/}	
Pérola (N)	2.582	2.100	388	3.049	3.497	1.696	2.847	3.237	2.424
Carnaval (P)	2.366	1.764	1.246	3.167	1.433	1.427	1.740	2.129	1.909
D. Calima (I)	2.172	1.958	939	2.833	1.604	1.541	1.960	1.937	1.868
Ceasa 2 (P)	2.079	1.790	1.266	2.900	1.357	1.489	1.400	1.956	1.775
Pintado (I)	2.054	1.428	216	2.769	1.526	1.685	1.953	2.237	1.733

^{1/} N = normal (85-105 days from sowing to harvest), I = intermediary (75-95 days), P = early (65-85 days); ^{2/} Average of four trials installed between June and August. Fungicide was applied twice; ^{3/} Average of two trials installed in April and August; ^{4/} Installed in December; ^{5/} Average of two trials installed in March and May; ^{6/} Average of two trials installed in March and April; ^{7/} Average of two trials installed in February and August; ^{8/} Installed in February; ^{9/} Installed in July.

with light red stripes. The seeds are light brown with purple stripes or spots (some seeds are almost totally purple) and 100-seed weight varies from 35.3 to 50.1 g (Vieira et al., 2001). It has good culinary quality, and the average protein content is 20%. It is resistant to fusarium wilt; moderately resistant to anthracnose, rust, and common bacterial blight; and moderately susceptible to angular leaf spot, alternaria leaf spot, and powdery mildew.

MAINTENANCE AND DISTRIBUTION OF PEDIGREE SEED

Seeds of Carnaval are produced and commercialized by Epamig, located at the following address: Vila Gianetti, 47, CEP 36571-000, Viçosa, MG, Brazil.

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