IAPAR 80 – Common bean

Vania Moda-Cirino*; Lourenço Oliari; Marco Antônio Lollato and Nelson da Silva Fonseca Júnior
Instituto Agronômico do Paraná (IAPAR), Área de Melhoramento e Genética Vegetal, Caixa Postal 481, CEP 86001-970, Londrina – PR, Brasil. (*Corresponding Author: E-mail:vamoci@pr.gov.br)

ABSTRACT

IAPAR 80 is a common bean cultivar developed by the Agronomic Institute of Paraná State (IAPAR), released for sowing in all areas of the state of Paraná. It belongs to the "carioca " commercial group, it shows high yield potential and resistance to the common mosaic virus and moderate resistance to anthracnose, common bacterial blight, rust and powdery mildew.

KEY WORDS: Phaseolus vulgaris, common bean, cultivar description, seed production.

INTRODUCTION

IAPAR 80, is a common bean (Phaseolus vulgaris L.) cultivar developed by the Agronomic Institute of Paraná State (IAPAR). It belongs to the "carioca" commercial group and, after evaluation in different environments during the 1993/94, 1994/95, 1995/96 and 1996/97 agricultural years, under the inbred line denomination LP91-22, was released for sowing in all areas of the state. The cultivar was submitted for approval and recommendation of the Southern-Brazil Bean Committee in 1997 and, subsequently, registered for commercialization at the National Service for Cultivar Protection of the Ministry of Agriculture under the number 00092, on September 30th, 1998.

PEDIGREE AND BREEDING METHODS

IAPAR 80 (Figure 1) was developed by the pedigree method through selection of single plants from a F_2 population, obtained by a multiple cross-breeding among inbred lines resistant to the main diseases found in the state of Paraná. The cultivar was tested in 55 environments composed by eight crop seasons: 4 dry seasons and 4 wet seasons. The number of test locations per season ranged from seven to 11.

Breeder's seed was obtained through the use of two generations of progeny tests. A initial sample of 500 plants was obtained from the experimental material and all the seeds from the selected plants were sowed in individual rows. The rows presenting unusual plants or seeds were eliminated and all seeds from the homogeneous rows were individually harvested and sowed in individual blocks in the following season. The homogeneous blocks for plant and seed characteristics were combined in a single stock to form the breeder's seed.

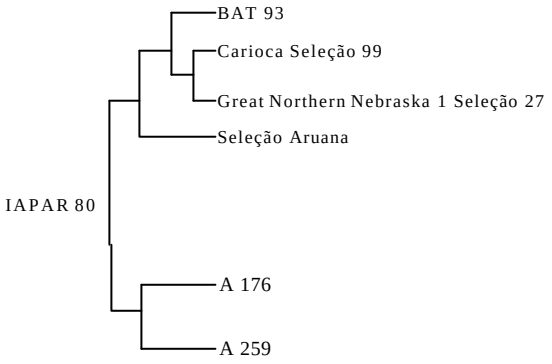

Figure 1 - IAPAR 80 pedigree.

PERFORMANCE

IAPAR-80 has been indicated for sowing throughout the State of Paraná. It flowers and reaches maturity at 43 and 92 days after emergence, showing high yield potential. During the 1993/94, 1994/95, 1995/96 and 1996/97 wet and dry seasons, yield trials in 55 environments in

Table 1- Grain yield (kg/ha) of IAPAR 80, and control cultivars in 55 environments of the Paraná State, during the 1993/94, 1994/95, 1995/96 and 1996/97 wet and dry seasons.

Cultivars	Wet/93	Dry/94	Wet/94	Dry/95	Wet/95	Dry/96	Wet/96	Dry/97	General Mean
IAPAR 80	1746	1970	2407	1490	2121	1863	2360	2186	2075
IAPAR 31	1635	1843	2081	1538	2150	1811	2390	2372	2044
Carioca	1541	1688	2022	1448	2026	1747	1916	2097	1864
IAPAR 14	1446	1480	2148	1372	1818	1634	2029	2012	1798

the State of Paraná, presented an average yield of approximately 2,075 kg/ha, which was 15,41%, 11,32% and 1,52% higher than the yieldof the cultivares used as controls: IAPAR 14, Carioca and IAPAR 31, respectively (Table 1).

OTHER CHARACTERISTICS

IAPAR 80 has indeterminate growth habit and type II plant (Singh, 1982), semi-erect stem, average height of 0.7m and a main stem average diameter of 0,006m. It has white-colored flowers and the average number of pods per plant and seeds per pod is of 15.42 and 6.0 respectively. It carries gene I, which confers resistante to the common mosaic virus (Drifjhout et al., 1978). It is moderately resistant to anthracnose, common bacterial blight, rust and powdery mildew and susceptible to the golden mosaic virus and the angular leaf spot (Moda–Cirino et al., 2000). The seeds are elliptical, opaque and beige with light brown stripes with an orange halo around the hilum. The average weight for 1,000 seeds is 228 grams. It has good culinary quality, the average cooking time is approximately 30 minutes, and the average protein content is 21.96%.

MAINTENANCE AND DISTRIBUTION OF FOUNDATION SEED

Foundation seed of IAPAR 80 is produced and commercialized by IAPAR, located at Rodovia Celso Garcia Cid, Km 375, P.O. Box 481, CEP 86001-970, Londrina, PR, Brazil. Small amounts of seeds for research or evaluation tests can be obtained at this address.

REFERENCES

Drifjhout, E.; Silbernagel, M. J. and Burke, D. W. 1978. Differentiation strains of bean common mosaic virus. Journal of Plant Pathology. 84:13-26.

Moda-Cirino, V.; Lollato, M. A .; Fonseca Jr., N.S. and Oliari, L. 2000. Cultivares.

Feijão: Tecnologia da Produção. Informe da Pesquisa. (135): 83-93, Jun.

Singh, S. P. 1982. A key for identification of different growth habits of Phaseolus vulgaris

L. Annual Report of Bean Improvement Cooperative. 25:92-94.

Received: Juanuary 15, 2001;
Revised: February 02, 2001;
Accepted: February 28; 2001.