

## IPR88 Uirapuru – Common bean

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### ABSTRACT

IPR88 Uirapuru, developed by the Agronomic Institute of Paraná State (IAPAR), is a common bean cultivar with broad adaptation, high yield potential, erect stems and branches, which favors direct mechanical harvesting. It has become a new alternative for cultivars of the black commercial group. It flowers and reaches maturity at 43 and 86 days after germination, respectively. It is resistant to the common mosaic virus, rust and powdery mildew. It has also shown moderately tolerance to high temperatures and water stress, which may occur during the reproductive stage.

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

### INTRODUCTION

IPR88 Uirapuru is a common beans cultivar (*Phaseolus vulgaris* L.) of the black commercial group which was developed by the Agronomic Institute of Paraná State (IAPAR). After evaluation in the 1997/98, 1998/99 and 1999/2000 seasons, under the inbred line denomination LP96-72, it was released for sowing all over the state, and submitted to the National Service of Cultivar Protection – SNPC at the Ministry of Agriculture for registration and protection, where it was registered under the number 06394, on September 12<sup>th</sup>, 2000.

### PEDIGREE AND BREEDING METHOD

IPR88 Uirapuru (Figure 1) was developed by the pedigree method. In the segregating  $F_2$  population, which was obtained from multiple crosses between inbred lines adapted to the edaphoclimatic conditions of the state of Paraná. Individual plants were selected and the progenies of the sixth selected individual plants were evaluated in the subsequent self fertilization generations until the  $F_7$  generation, from which the LP96-72 inbred line was selected. The line was yield tested in 19 environments in the state of Paraná, during six crop seasons: three wet seasons and three dry seasons, with a minimum of three locations per season.

Breeder's seed was obtained through two generations of progeny tests. A initial sample of 400 seeds carrying authentic cultivar traits was obtained from the experimental materials and all seeds from the selected plants were sowed in individual rows. Rows which showed unusual plants or seeds were eliminated. In the following generations, all the progeny of the homogeneous rows were sowed in individual blocks and the homogeneous blocks for plant and seed characteristics were combined in a single stock to form the breeder's seeds.

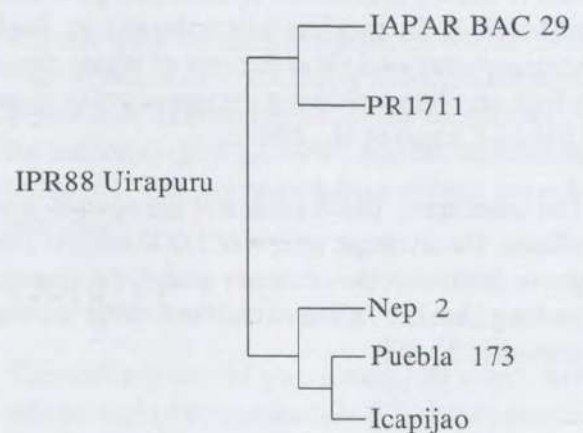


Figure 1- IPR88 Uirapuru pedigree.

## PERFORMANCE

IPR88 Uirapuru has been indicated for sowing all over Paraná. It flowers and reaches maturity at 43 and 86 days after germination, respectively, and has high yield potential. In the black bean genotypes

yield trials in the 1997/98, 1998/99, 1999/2000 seasons, during the wet and dry seasons, over 19 environments of Paraná, it yielded an average of 2,407 Kg/ha, which was 21% and 10% higher than the average yield of IAPAR 44 and IAC Una cultivars, respectively, and very similar to that of FT Nobre cultivar, used as control (Table 1).

**Table 1.** Grain yield (Kg/ha) of IPR88 Uirapuru bean and control cultivars in 19 environments of Paraná, during the wet and dry seasons of 1997/98, 1998/99 and 1999/2000.

Cultivars	Wet/97	Dry/98	Wet/98	Dry/99	Wet/99	Dry/2000	General mean
IPR88-Uirapuru	1647	2013	2152	2902	2915	2811	2407
FT-Nobre	1919	1996	2157	2610	2789	2919	2398
IAC-Una	1699	1719	2188	2370	2610	2548	2189
IAPAR-44	1586	1387	2086	1879	2690	2331	1993

## OTHER CHARACTERISTICS

IPR88 Uirapuru has indeterminate growth habit, type II plant (Singh, 1982), erect stem and branches, and average plant height of 0.7m. Direct mechanical harvesting is possible with acceptable losses, as long as area declivity, population and plant development are adequate. Its flowers are purple, the average insertion height of the first pod is 0.11m and the average number of pods per plant and seeds per pod is 15.3 and 6.2, respectively.

It carries gene I, which confers resistant to the common mosaic virus (Drifjhout et al., 1978) and it shows resistance to rust and powdery mildew. It is moderately tolerant to high temperatures and short periods of water stress which may happen during the reproductive stage (Moda-Cirino et al., 2000).

The seeds have black coat, and are opaque and elliptic. The average weight of 1,000 seeds is 246 grams. It has excellent culinary quality, the average cooking time is 30 minutes and the average protein content is 21.8%.

## MAINTENANCE AND DISTRIBUTION OF FOUNDATION SEED

Foundation seed of IPR88 Uirapuru 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 of strains of bean common mosaic virus. *Journal 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.

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