

BRS 184 Soybean

Romeu Afonso de Souza Kiihl; Leones Alves de Almeida; José Francisco Ferraz de Toledo*; Luís Carlos Miranda; Milton Kaster; Lineu Domitt; Antônio Eduardo Pípolo and José Tadashi Yorinori

Brazilian Corporation for Agricultural Research, National Soybean Research Center – Embrapa Soybean, P.O. Box 231, CEP 86001-970, Londrina, PR, Brazil. (* Corresponding Author. E-mail: toledo@cnpso.embrapa.br)

ABSTRACT

BRS 184 is a soybean cultivar developed by Embrapa Soybean for sowing in Parana State. It flowers and reaches maturity 53 and 121 days after germination and yields 3,210 kg/ha. BRS 184 is resistant to stem canker, frog-eye leaf spot, bacterial pustule and moderately resistant to powdery mildew.

KEY WORDS: *Glycine max*, Soybean, Cultivar description, Seed production.

INTRODUCTION

BRS184 is a soybean (*Glycine max* [L.] Merrill) cultivar developed by the Soybean National Research Center of the Brazilian Corporation for Agriculture Research (Embrapa Soybean). It was released for sowing in Parana State after field yield tests performed in the 1996/97, 1997/98 and 1998/99 seasons under the inbred line denomination BR94-9682 (Embrapa, 1999). It was submitted to the National Service for Cultivar Protection of the Ministry of Agriculture for registration and protection.

Pedigree and Breeding Method

BRS 184 originated from a single plant selection in the F₄ SSD population obtained from the cross FT-Guaíra x IAC-13-C (Figure 1). It was tested in 24 environments formed by three growing seasons and five to 11 location per season (Alliprandini et al., 1994).

The breeders seed was obtained using a two-generation progeny selection. A initial sample of 300 plants was taken from the experimental material and sowed individually in four-meter rows. Off-type rows (plant and seed characteristics) were screened out and the remaining material was sown in a identity preserving fashion in four to five row blocks during the following season. Seeds from the homogeneous blocks (plant and seeds characteristics) were combined in a single stock to form the breeders seed (Toledo et al., 1994).

Performance

BRS 184 reached maturity 121 days after germination and yielded an average of 3,210 kg/ha in the 24 test environments. This performance was 20.% and 6.7% superior than that of BR-16 in the last two years and OCEPAR 13 in the last year, respectively, which were used as controls (Table 1). Its superiority is expressed in all regions of the Parana State.

1991	greenhouse cross to obtain	F ₁ (FT-Guaira x IAC-13-C)
1991	greenhouse F ₁ selfing to obtain	F ₂ (FT-Guaira x IAC-13-C)
1991/1992	field F ₂ SSD selfing to obtain	F ₃ (FT-Guaira x IAC-13-C)
1992/1993	field F ₃ SSD selfing to obtain	F ₄ (FT-Guaira x IAC-13-C)
1993/1994	field F ₄ SSD selfing to harvest single plants	F ₄ (FT-Guaira x IAC-13-C)
1993/1994	field grow progeny	BR 94-9682

Figure 1 - Origin of BRS 184 soybean cultivar.

Table 1 - Performance of BRS 184, BR-16 and OCEPAR 13 soybean cultivars in 24 environments (1996/97, 1997/98 and 1998/99 seasons and five to 11 locations per season).

Season	Cultivar	Yield (kg/ha)	Maturity (days)	Plant height (cm)	Lodging (1 – 5) ^{1/1}
1996/97	BRS 184	3,380	120	94	2.4
	BR 16	3,040	118	89	1.4
	OCEPAR 13	--	--	--	--
1997/98	BRS 184	3,210	120	78	1.6
	BR 16	2,640	120	71	1.1
	OCEPAR 13	--	--	--	--
1998/99	BRS 184	3,090	122	87	2.1
	BR 16	2,610	121	84	2.8
	OCEPAR 13	2,900	121	74	1.7

^{1/1} = no lodging to 5 = complete lodging

Other Characteristics

BRS 184 has determinate growth habit, good lodging and seed shattering resistance. It flowers in an average of 53 days and is usually ready for harvesting after 121 days (Kiihl and Garcia, 1989). The average plant height and 100 seeds weight is 83cm and 16.4g, respectively. The oil and protein percentual contents are 20.8% and 38.0%, respectively (Miranda et al., 1998). BRS 184 shows purple flowers, brown pubescence, light brown pods, moderately shiny yellow seed coat and negative reaction to peroxidase. It is resistant to frog-eye leaf spot, bacterial pustule and moderately resistant to powdery mildew (Yorinori, 1994).

MAINTENANCE AND DISTRIBUTION OF PEDIGREE SEED

Breeder seed of BRS 183 is maintained by Embrapa Soybean at Londrina, PR, Brazil. BRS 183 is marketed by Embrapa Technological Business, P.O. Box 231, CEP 86001-970, Londrina, PR, Brazil.

REFERENCES

Alliprandini, L.F., Toledo, J.F.F. de, Fonseca Jr., N.F., Almeida, L.A. de and Kiihl, R.A.S. 1994. Efeitos da interação genótipo x ambiente sobre a produtividade da soja no Estado do Paraná. *Pesquisa Agropecuária Brasileira*. 29: 1433-1444.

EMBRAPA. Centro Nacional de Pesquisa de Soja. 1999. *Recomendações Técnicas para a Cultura da Soja no Paraná, 1999/2000*. p.114-118. Documentos, 131. Londrina, PR.

Kiihl, R.A.S. and Garcia, A. 1989. The use of the long-juvenile trait in breeding soybean cultivars. p.994-1000. In: *World Soybean Research Conference, 4th*, Buenos Aires, 1989. Soybean Association of Argentina, Buenos Aires.

Miranda, Z.F.S.; Arias, C.A.A.; Toledo, J.F.F. de and Oliveira, M.F. de 1998. Soybean seed oil content: genetic control under different photoperiods. *Genetics and Molecular Biology*. 21(3): 387-394.

Toledo, J.F.F. de; Almeida, L.A. de; Kiihl, R.A.S.; Panizzi, M.C.C.; Kaster, M.; Miranda, L.C. and Menosso, O.G. 1994. Soybean Genetics and Breeding. p.19-36. In: *Tropical Soybean: Improvement and production*. Food and Agriculture Organization of the United Nations, Rome.

Yorinori, J.T. 1994. Fungal diseases. p.37-60. In: *Tropical Soybean: Improvement and production*. Food and Agriculture Organization of the United Nations, Rome.

Received: April 05, 2000;
Revised: June 21, 2000;
Accepted: July 28, 2000.