

## BRS 183 Soybean

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### ABSTRACT

BRS 183 is an early maturing soybean cultivar developed by Embrapa Soybean for sowing in Parana State. It flowers and reaches maturity 53 and 118 days after germination and yields 3,038 kg/ha. BRS 183 is resistant to stem canker, frog-eye leaf spot, bacterial pustule and moderately resistant to powdery mildew.

**KEY WORDS:** Soybean, *Glycine max*, cultivar description, seed production

### INTRODUCTION

BRS 183 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 is an early maturing cultivar released for sowing in Parana State after field yield tests in the 1996/97, 1997/98 and 1998/99 seasons, under the inbred line denomination BR94-4150 (Embrapa, 1999). It was submitted to the National Service for Cultivar Protection of the Ministry of Agriculture for registration and protection.

### Pedigree and Breeding Methods

BRS 183 originated from a single plant selection in the F<sub>4</sub> SSD population obtained from the backcross Embrapa 1 (3) x IAC-12 (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 183 is an early maturing cultivar that yielded an average of 3,038kg/ha in the 24 test environments. This yield was 2.5% and 5.6% higher than that of IAS 5 and FT-Guaíra, respectively, which were used as controls (Table

1989	greenhouse cross to obtain	F <sub>1</sub>	(Embrapa 1 x IAC-12)
1989	greenhouse first backcross to obtain	F <sub>1</sub>	[(Embrapa 1 x IAC-12) x Embrapa 1]
1990	greenhouse second backcross to obtain =	F <sub>1</sub>	[(Embrapa 1 x IAC-12) x Embrapa 1] x Embrapa 1
1990/1991	field F <sub>1</sub> SSD selfing to obtain	F <sub>2</sub>	(Embrapa 1 (3) x IAC-12)
1991/1992	field F <sub>2</sub> SSD selfing to obtain	F <sub>3</sub>	(Embrapa 1 (3) x IAC-12)
1992/1993	field F <sub>3</sub> SSD selfing to obtain and harvest single plants	F <sub>4</sub>	(Embrapa 1 (3) x IAC-12)
1993/1994	field F <sub>3</sub> SSD selfing to harvest single plants	F <sub>4</sub>	(Embrapa 1 (3) x IAC-12)
1994/1995	field grow progeny		<b>BR 94-4150</b>

**Figure 1.** Origin of BRS 183 soybean cultivar.

1). Its superiority is better expressed in the southern and south-west regions of Parana (higher altitudes

and cooler temperatures), but it is indicated for sowing in all growing areas of the State.

**Table 1** - Performance of BRS 183, IAS 5 and FT-Guaíra 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) <sup>1/1</sup>
1996/97	BRS 183	3,290	118	84	1.4
	IAS 5	3,180	117	82	1.5
	FT-Guaíra	3,320	116	90	1.5
1997/98	BRS 183	2,850	117	68	1.1
	IAS 5	2,810	116	68	1.1
	FT-Guaíra	2,610	116	73	1.3
1998/99	BRS 183	3,060	119	77	1.4
	IAS 5	2,970	118	80	1.8
	FT-Guaíra	2,850	117	84	1.8

<sup>1/1</sup> = no lodging to 5 = complete lodging

### Other Characteristics

BRS 183 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 118 days (Kiihl and Garcia, 1989). The average plant height and 100 seeds weight is 73cm and 15.6g, respectively. The oil and protein percentual contents are 18.6% and 38.7%, respectively (Miranda et al., 1998). BRS 183 shows white flowers, gray pubescence, dark brown pods, shiny yellow seed coat and positive reaction to peroxidase. It is resistant to stem canker, 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.

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## BRS 184 Soybean

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

**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) <sup>1/1</sup>
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

<sup>1/1</sup> = 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.

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## BRS 185 Soybean

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### ABSTRACT

BRS 185 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 3,090 kg/ha. BRS 185 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

BRS185 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 BR94-11861 (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 185 originated from a single plant selection in the F<sub>4</sub> SSD population obtained from the cross FT-Abyara x IAC-13-B (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 185 reached maturity 121 days after germination and yielded an average of 3,090 kg/ha in the 24 test environments. This performance was 14.2% and 5.5% 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 better expressed in the southern and south-west regions of Parana (higher

1991	greenhouse cross to obtain	F <sub>1</sub> (FT-Abyara x IAC-13-B)
1991	greenhouse F <sub>1</sub> selfing to obtain	F <sub>2</sub> (FT-Abyara x IAC-13-B)
1991/1992	field F <sub>2</sub> SSD selfing to obtain	F <sub>3</sub> (FT-Abyara x IAC-13-B)
1992/1993	field F <sub>3</sub> SSD selfing to obtain	F <sub>4</sub> (FT-Abyara x IAC-13-B)
1993/1994	field F <sub>4</sub> SSD selfing to harvest single plants	F <sub>4</sub> (FT-Abyara x IAC-13-B)
1993/1994	field grow progeny	<b>BR 94-11861</b>

**Figure 1** - Origin of BRS 185 soybean cultivar.

altitudes and cooler temperatures), but it is indicated for sowing in all growing areas of the State.

### Other Characteristics

BRS 185 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 81cm and 16.0g, respectively. The oil and protein percentual contents are 19.8% and 39.6%, respectively (Miranda et al., 1998). BRS 185 shows purple flowers, gray 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).

**Table 1** - Performance of BRS 185, 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) <sup>1/</sup>
1996/97	BRS 185	3,360	120	92	1.8
	BR 16	3,040	118	89	1.4
	OCEPAR 13	--	--	--	--
1997/98	BRS 185	2,940	120	77	1.1
	BR 16	2,640	120	71	1.1
	OCEPAR 13	--	--	--	--
1998/99	BRS 185	3,060	122	84	1.7
	BR 16	2,610	121	84	2.8
	OCEPAR 13	2,900	121	74	1.7

<sup>1/</sup>1 = no lodging to 5 = complete lodging

### 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.

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