

Volume 7

Number 4

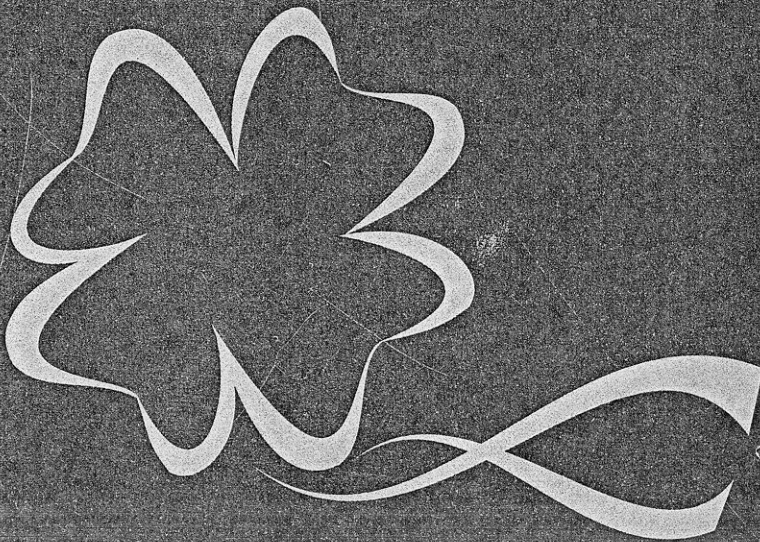
December 2007

ISSN 1518-7853

Sep  
15586

# CAB

CROP BREEDING AND  
APPLIED BIOTECHNOLOGY



BRAZILIAN SOCIETY OF PLANT BREEDING

[www.sbmp.org.br](http://www.sbmp.org.br)

## CULTIVAR RELEASE

### Barley cultivar BRS Lagoa

Euclides Minella<sup>1</sup>\*, Gerardo Arias<sup>1</sup>, Marcio Só e Silva<sup>1</sup>, and Luiz Eichelberger<sup>1</sup>

Received 01 June 2006

Accepted 28 April 2007

**ABSTRACT** - BRS Lagoa is an early maturing, two-rowed spring barley registered by Embrapa for commercial production in southern Brazil. It combines good total biomass and grain yield potential, net blotch and powdery mildew resistance, and malting quality. It is well adapted to the major barley production regions of southern Brazil but achieves the full grain yield and kernel plumpness potential in the state of Paraná.

#### INTRODUCTION

BRS Lagoa is a barley (*Hordeum vulgare* sp. *vulgare*) cultivar bred by Embrapa Trigo. It was registered in 2005 for production in the states of Rio Grande do Sul, Santa Catarina and Parana, after five years of yield testing and malting quality evaluation, denominated inbred line PFC 99051. BRS Lagoa traces back to single-plant selection in the F<sub>4</sub> population of the cross PFC 9215/PFC 9288 (Figure 1). Lines PFC 9215 and PFC 9288 are locally developed inbreds of Embrapa. The cross and inbred line selection were performed in 1994 and 1999, respectively. The F<sub>2</sub>, F<sub>3</sub> and F<sub>4</sub> generations were advanced by bulks of selected spikes in Passo Fundo. The F<sub>4</sub> generation was space-planted for single-plant selection. The F<sub>5</sub> plant progenies were grown in Passo Fundo, where selected progeny rows were harvested in bulk. These progenies were tested in row plots in the following generation in Passo Fundo, where the row with F<sub>4</sub> plant number three was harvested in bulk and advanced to observation plots in 1999, to originate line PFC 99051. The line was then tested in preliminary, regional and advanced yield trials in 15 environments (three sites in five growing seasons). In 2005 it was registered under the name BRS Lagoa for

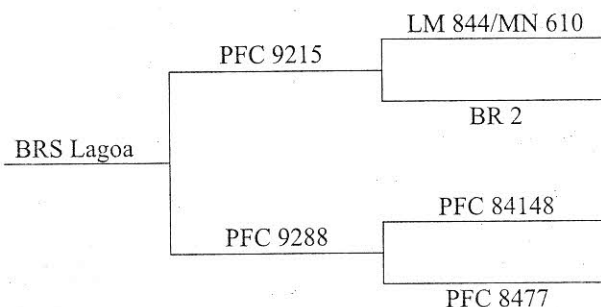


Figure 1. Pedigree of BRS Lagoa

production in all regions of the states of Rio Grande do Sul, Santa Catarina and Parana. Due to its superior field performance and acceptable malting quality results, BRS Lagoa was included by the Comissão de Pesquisa de Cevada (Barley Research Commission) in the official list of recommended varieties for southern Brazil (Comissão 2005).

#### PERFORMANCE

BRS Lagoa has a grain yield potential of 5,800 kg ha<sup>-1</sup> (Minella 2004). Average grain yield and kernel plumpness across 15 environments were 4,819 kg ha<sup>-1</sup> and 94.2%

<sup>1</sup> Embrapa Trigo. BR 285, Km 294. C.P. 451, 99.001-970, Passo Fundo, RS, Brasil. \*E-mail: eminella@cnpt.embrapa.br

**Table 1.** Mean grain yield and kernel plumpness of BRS Lagoa and check cultivar MN 698, from 2000 to 2004, at three locations in southern Brazil

Location	Grain yield (kg ha <sup>-1</sup> )			Kernel plumpness (%) <sup>1</sup>	
	BRS Lagoa	MN 698	% of Ck.	BRS Marciana	MN 698
Passo Fundo	4,507	3,867	115	94.2	87.6
Victor Graeff	4,542	3,566	117	95.4	88.4
Guarapuava	5,847	4,556	128	96.8	92.7
Average	4,819	3,996	121	95.4	89.6

<sup>1</sup> percent kernels retained in a 2.5 mm diameter sieve

(Table 1), respectively, in the growing seasons 2000-2004. The average yield across all locations was 21% higher than that of the check cultivar, varying from 15% in Victor Graeff, RS to 28% in Guarapuava, PR. The yield potential of BRS Lagoa was confirmed in seed multiplication fields in the production region of Passo Fundo. In micromalting evaluations performed so far, BRS Lagoa met most of the quality parameters required for malting barley in Brazil. Pilot and commercial malting quality evaluations at the malt/brewing industry level are going on. Due its rapid vegetative growth and its high biomass yield BRS Lagoa can also be grown for fodder either as an early fall pasture, silage or as forage grain in important dairy and meat production regions of Rio Grande do Sul and Parana.

### OTHER CHARACTERISTICS

BRS Lagoa heads and reaches harvest maturity about 81 and 128 days after seedling emergence, respectively. It heads one day later than the check MN 698. It has a semi-erect growth habit in the vegetative phase. It grows to an average height of 89 cm and is moderately lodging-resistant due to its good straw strength. BRS Lagoa carries genes for powdery mildew, leaf rust and net blotch resistance

which, under field conditions, confer the plants moderate resistance to these diseases (Minella 2005).

### MAINTENANCE AND DISTRIBUTION OF FOUNDATION SEED

Breeder seed of BRS Lagoa is maintained by Embrapa Trigo. Foundation seed is produced and sold by Embrapa Transferência de Tecnologia - EN Passo Fundo, Caixa Postal 451, CEP 99001-970, Passo Fundo, RS, Brazil.

### REFERENCES

- Comissão de Pesquisa de Cevada (2005) **Indicações técnicas para a produção de cevada cervejeira nas safras 2005 e 2006.** Embrapa Trigo, Passo Fundo, 102 p.
- Minella E (2004) Desempenho comparativo das cultivares de cevada indicadas para cultivo no sul do Brasil. In: Minella E (ed.). **Anais e ata da 24ª Reunião Anual de Pesquisa de Cevada.** Embrapa Trigo, Passo Fundo, p. 156-161.
- Minella E (2005) Melhoramento da cevada. In: Borém A (ed.) **Melhoramento de espécies cultivadas.** Editora UFV, Viçosa, p. 275-299.