

Barley cultivar BRS Mariana

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ABSTRACT - *BRS Mariana* is an early-maturing, two-rowed spring barley registered in 2005 for commercial production in southern Brazil. Its features good biomass and grain yield potential as well as disease resistance (to net blotch, powdery mildew, leaf rust). It is well adapted to all major barley production regions of southern Brazil but achieves full yield potential in the state of Paraná.

INTRODUCTION

BRS Mariana 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 Paraná, after five years of yield testing and malting quality evaluation, denominated inbred line PFC 98103. BRS Mariana traces back to a single-plant selection in the F₄ population from the cross PFC 88137/PFC 8905//PFC 9205 (Figure 1). Lines PFC 88137, PFC 8905 and PFC 9205 are inbreds developed locally by Embrapa. The cross and the inbred line selection were made in 1993 and 1998, respectively. The F₂, F₃ and F₄ generations were advanced by bulks of selected spikes in Passo Fundo. The F₄ generation was space-planted for single-plant selection. The F₅ plant progenies were grown in Passo Fundo, where selected progeny rows were harvested in bulk. Selected progenies were tested in row plots in the following generation in Passo Fundo, where row from F₄ plant number 25 was harvested in bulk and advanced to observation plots in 1998, where line PFC 98103 was originated. 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 Mariana, for production in all regions of the

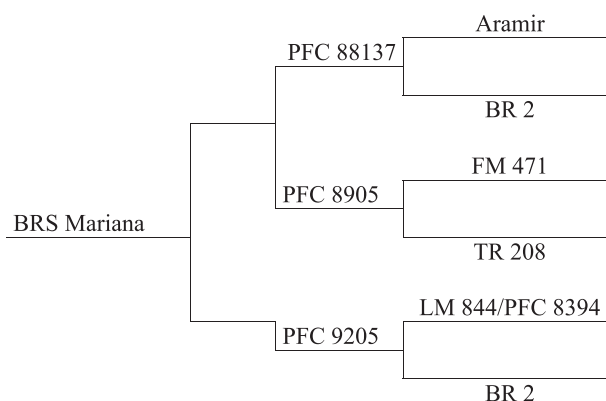


Figure 1. Pedigree of BRS Mariana

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

PERFORMANCE

BRS Mariana has a grain yield potential of 5,500 kg ha⁻¹ (Minella 2004). Average grain yield and kernel

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plumpness across 15 environments, in the growing seasons 2000-2004 were 4,697 kg ha⁻¹ and 93.2% (Table 1), respectively. The mean yield across all locations was 18% higher than that of the check cultivar, varying from 14% in Victor Graeff, RS to 19% in Guarapuava, PR and Passo Fundo, RS. The yield potential of BRS Mariana was confirmed in seed multiplication fields in the production regions Guarapuava and Ponta Grossa, Parana. In micromalting evaluations, BRS Mariana met most of the requirements for malting barley. Pilot and commercial malting quality evaluations at the malt/brewing industry level are going on. Due to its earliness and high biomass yield potential, the cultivar can be

also grown for fodder either as early fall pasture, silage or as forage grain, in important dairy and meat production regions of Rio Grande do Sul and Paraná.

OTHER CHARACTERISTICS

BRS Mariana heads and reaches harvest maturity about 82 and 130 days after seedling emergence, respectively. It heads two days later than the check MN 698. It has a semi-erect growth habit in the vegetative phase. It grows to an average height of 90 cm and is moderately lodging-resistant due to the good straw strength. BRS Mariana carries genes for powdery mildew, leaf rust and net blotch resistance, which confers

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

Location	Grain yield (kg ha ⁻¹)			Kernel plumpness (%) ¹	
	BRS Mariana	MN 698	% of Ck.	BRS Mariana	MN 698
Passo Fundo	4,614	3,867	119	90.5	87.6
Victor Graeff	4,071	3,566	114	93.7	88.4
Guarapuava	5,405	4,556	119	95.6	92.7
Average	4,697	3,996	118	93.2	89.6

¹ percent kernels retained in a 2.5 mm diameter sieve

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

MAINTENANCE AND DISTRIBUTION OF FOUNDATION SEED

Breeder seed of BRS Mariana 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.

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