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CULTIVAR RELEASE

CD 112 - Wheat cultivar of excellent agronomic type

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ABSTRACT - *CD 112 has an excellent agronomic type, low plant height, good industrial quality and a mean grain yield of 2,459, 2,833 and 4,090 kg ha^{-1} in the regions 6 (North), 7 (Central West) and 8 (Central South) of the state of Paraná, respectively, was developed by COODETEC and is indicated for cultivation in the state of Paraná.*

Key words: crop breeding, grain yield, CD 112.

INTRODUCTION

Crop breeding and the development of technologies for wheat as well as the use of favorable environment conditions and the adoption of adequate technologies for the different wheat-producing regions boost the mean yields. COODETEC is working on the development of cultivars adapted to the main wheat-growing regions of Brazil. Desirable traits of the new cultivars are mainly high grain yield, high industrial quality, tolerance to pre-harvest sprouting, drought, and to aluminum-toxic soil as well as resistance to shattering, diseases and lodging, increased tillering capacity and response to fertilization, wide adaptation and grain yield stability. The new cultivar CD 112 is indicated for cultivation in Paraná owing to its high grain yield potential, good industrial quality and excellent agronomic type.

PEDIGREE AND BREEDING METHODS

The cultivar CD 112 was developed by COODETEC (Figure 1). F_1 seeds were obtained by the crossing of the parents IOC 905 and PG 877 (pedigree CO13043-00P-00P-11P-0P). The F_2, F_3 and F_4 populations were subjected to selection by the modified mass method, where the best plants are selected and their seeds mixed and used to establish the next generation. The F_5 and F_6 populations underwent selection by the pedigree method, which consists in the selection of plants whose seeds are used to establish a new population in the following generation. The F_7 populations were selected by the mass method and generated several sib lines, of which the best originated the new cultivar CD 112.

PERFORMANCE

After an evaluation in preliminary trials, other trials to determine the Value for Cultivation and Use (VCU) were realized in 2001, 2002 and 2003, at different places and in different seasons of the regions of adaptation 6 (North), 7 (Center West) and 8 (Center South) of the state of Paraná

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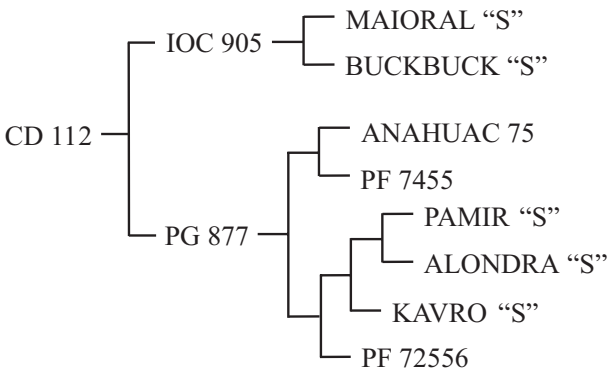

Figure 1. Pedigree of the new cultivar CD 112

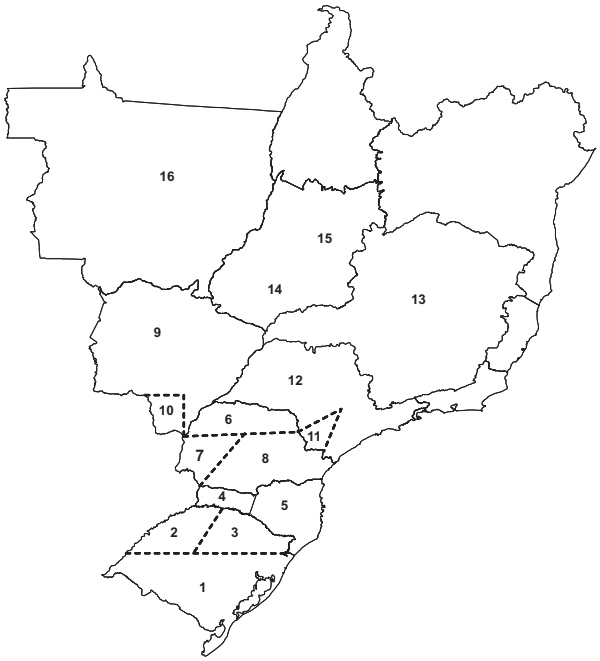

Figure 2. Regions of adaptation for trials that determine the Value for Cultivation and Use (VCU)

(Figure 2). The cultivar was labeled with the acronym CD 2015. The VCU trials were set up in a randomized block design, with three replications. The 25 treatments were sown in plots of six 5 m long rows spaced 0.2 cm apart, covering a total area of 6 m^2. Values 3%, 6% and 12% higher than the control means, respectively, were found for grain yield in the regions 6, 7 and 8 of the state of Paraná in the three regions (Table 1). The good performance of the new cultivar CD 112 indicated it for cultivation in the wheat-growing regions 6, 7 and 8 of the state of Paraná (RCCSBPT, 2005). The cultivar was registered by the Serviço Nacional de Proteção de Cultivares do Ministério da Agricultura, index nr. 00551, on February 18, 2004 (MAPA 2005).

OTHER TRAITS

The pros of the new cultivar CD 112 are high grain yield potential, excellent agronomic type and good industrial quality (Franco et al. 2004). The plant height of the new cultivar CD 112 is low, between 65 and 85 cm, and the cycle is mean, between 63 and 76 days from emergence to flowering and 113 to 136 days from emergence to maturation (Table 2). The means of these characteristics were 76 cm, 70 days and 125 days, respectively, which vary according to climate conditions, sowing seasons and soil type. Cultivar CD 112 presented results that classify it as moderately lodging resistant, moderately resistant to moderately susceptible to pre-harvest sprouting and moderately tolerant to aluminum-toxic soil. In the analysis of industrial quality the cultivar presented mean general gluten strength (W), 291, which include it in the group of bread wheat cultivars, with a mean hectoliter weight of 77 $kg.hL^{-1}$ and 1000 grain weight of 37 g (Table 2). Information on different diseases in Paraná was compiled in field experiments from 1998 to 2003. The new cultivar CD 112 was classified as moderately resistant to soil-borne wheat mosaic virus. Medium to low severity of powdery mildew (*Erysiphe graminis tritici*) attack was observed on the cultivar, which characterized it as moderately susceptible. According to Reis et al. (2001) powdery mildew is, in chronological order, the first disease that occurs in winter cereals (Table 2). The cultivar was susceptible to head blight (*Fusarium graminearun*) and spot blotch (*Bipolaris sorokiniana*) and speckled leaf blotch (*Septoria tritici* and *S. Nodorum*). Severity indices of leaf spot and glume blotch were determined, which classified the new cultivar as moderately susceptible (Table 2). In the evaluations of leaf rust (*Puccinia recondita* f. Sp. *Tritici*), the mean severity in field conditions was low, indicating that the new cultivar is moderately resistant (Table 2).

SEED MAINTENANCE AND DISTRIBUTION

COODETEC (BR 467 - km 98 - Caixa Postal 301 - CEP.85813-450 - Cascavel/PR, Brazil) is licenser of protected cultivars according to law nr. 9456/97. The

Table 1. Mean grain yield (kg ha^{-1}) of the new cultivar CD 112 and the controls in the wheat-producing regions 6, 7 and 8, in the state of Paraná, from 2001 to 2003

Cultivar	Region 6				Region 7				Region 8		
	2001	2002	2003	Mean	2001	2002	2003	Mean	2002	2003	Mean
CD 112	3190	1519	2668	2459	2726	2387	3385	2833	3420	4760	4090
Mean (C)*	3027	1585	2562	2391	2740	2225	3072	2679	3088	4245	3667

*The controls used in the comparison were T. BR 18 T., IPR 85 and IAPAR 53 in the Regions 6 and 7 of Paraná; and CEP 24 and BRS 49 in Region 8 of Paraná

Table 2. Means of days from emergence to flowering (EF), days from emergence to maturation (EM), plant height (PH), hectoliter weight (HW), weight of 1000 grains (WG), general gluten strength (GW), leaf rust (LR), leaf spot (LS) and powdery mildew of the leaf (PM) of the new cultivar CD 112 and the controls, in VCU trials conducted in the Regions 6, 7 and 8 of Paraná from 2001 to 2003

Cultivar	EF	EM	PH	HW	WG	GW	LR	LS	PM
	(days)	(days)	(cm)	(kg.hL^{-1})	(g)	(10^{-4} J)	(%)	(score)[1]	(score)[1]
CD 112	70	125	76	77	37	291	6	2.4	0.8
T. BR 18 T.	64	120	75	77	41	266	10	2.6	1.0
IAPAR 53	74	126	79	76	38	230	39	3.4	1.1
CEP 24	73	129	96	75	39	248	9	1.5	0.9
Mean (T)	70	125	83	76	39	248	19	2.5	1.0

[1]Score scale of 1 to 9

institution contracts seed companies for multiplication and trade. Besides, regional representatives promote, under the supervision of specific administration, seed commercialization and distribution.

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