Crop Breeding and Applied Biotechnology 4:362-363, 2004
Brazilian Society of Plant Breeding. Printed in Brazil

CD 111 - Wheat cultivar

Francisco de Assis Franco[1], Volmir Sergio Marchioro[1*], Ivan Schuster[1], Tatiane Dalla Nora[1], Edson Feliciano de Oliveira[1], and Ademar Alves Sobrinho[1].

Received 17 March 2004

Accepted 22 May 2004

ABSTRACT *- 'CD 111' was developed by COODETEC and is indicated for cultivation in the State of Paraná. This cultivar is broadly adaptable, has a high industrial quality, drought tolerance, and mean grain yields of 2637; 2804; and 3803 kg ha^{-1} in the regions 6 (north), 7 (center-west) and 8 (center-south) in the State of Paraná, respectively.*

Key words: COODETEC´s breeding program, wheat cultivar, CD 111

INTRODUCTION

The Wheat Breeding Program of COODETEC intends to meet different environmental demands. Main characteristics under improvement are the yield potential, industrial quality, tolerance to spike sprouting, diseases, drought, acid soils, and natural threshing as well as lodging resistance, a high tiller number, response to fertilizer, and grain yield adaptability and stability. 'CD 111' has outstanding productivity potential, drought tolerance, and industrial quality.

PEDIGREE AND BREEDING METHODS

The wheat (*Triticum aestivum* L.) cultivar CD 111 was developed by COODETEC. F_1 seeds were obtained from the cross of 'EMBRAPA 27'/'OCEPAR 18' and 'ANAHUAC 75' parents (Figure 1). Mass selection, which consists in the selection of the best plants, whereupon these plant seeds are mixed and used to obtain the next generation, was utilized in the selection of the F_2 population. The pedigree method, which is the selection of individual plants, where seeds of each plant are used to obtain a new population in the following generation, was utilized in the selection of the F_3, F_4, F_5, and F_6 populations. Numerous sib lines were selected in F_7; the best line gave origin to the CD 111 cultivar.

PERFORMANCE

'CD 111' was tested under the experimental designation 'CD 2014'. After being evaluated in previous experiments in 1998 and 1999 in Cascavel and Palotina, State of Paraná, the cultivar was evaluated in different locations and years in the adaptation regions 6 (north), 7 (center-west) and 8 (center-south) of Paraná (IAPAR 2003). Table 1 displays the mean grain yield efficiency of the regions 6, 7, and 8 in the State of Paraná. The grain yield efficiency of the CD 111 cultivar came to 9%, 21%, and 6% above the mean, respectively. Due to CD 111's good performance, it was indicated for cultivation

[1]Cooperativa Central de Pesquisa Agrícola (COODETEC). Rodovia BR 467, km 98, C. P. 301, 85818-660, Cascavel, PR, Brasil. *E-mail: volmir@coodetec.com.br

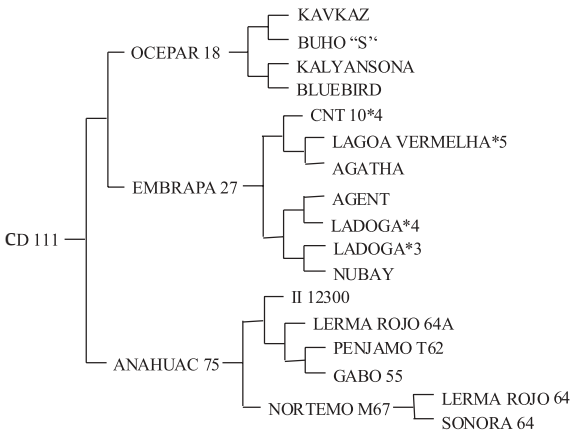

Figure 1. CD 111 pedigree

in the regions 6, 7, and 8 in Paraná State (IAPAR 2003), and registered on July 10, 2003, by the National Service of Cultivars Protection (SNPC), nr 00450 (MAPA 2003). The indication for cultivation was extended to regions 1, 2, and 3 of Rio Grande do Sul and regions 4 and 5 of Santa Catarina, to regions 9 and 10 of Mato Grosso do Sul, regions 11 and 12 of São Paulo, region 13 of Minas Gerais, regions 14 and 15 of Goiás and region 16 of Mato Grosso in 2003.

OTHER CHARACTERISTICS

CD 111's plant height is intermediate, varying from 60 to 90 cm, and the cycle is short/intermediate, varying from 59 to 76 days to flowering, and 110 to 130 days to maturity. Mean values of these characteristics were 81 cm, 67 days, and 125 days respectively, which can vary according to environmental conditions, the sowing date and soil type. An analysis of the industrial quality revealed a mean general gluten force (W) of 356 x 10^{-4} Joules. The weight of one hectoliter and of a thousand seeds amounted to 75 kg hL^{-1} and 32 grams, respectively. 'CD 111' was classified as moderately resistant to lodging, from moderately resistant to moderately susceptible to spike sprouting, and moderately tolerant to acid soils. In relation to the main diseases, 'CD 111' was classified as moderately susceptible to *Blumeria graminis* f.sp. *tritici*, moderately resistant to *Bipolares sorokiniana*, moderately susceptible to *Septoria tritici* and *Stagonospor nodorum*, and susceptible to *Fusarium graminearun*. 'CD 111' was also classified as moderately resistant to *Puccinia triticina*, which is more frequent in regions of long rain periods, and regions where temperature averages lie above 20 ^{0}C after the initial flowering (Reis et al. 2001). Top characteristics of CD 111 are wide adaptation, high grain yield potential, high industrial quality, and drought tolerance.

1. 110 (¹) 6, 7, 8

	6			7				8			
	2001	2002		2000	2001	2002		2000	2001	2002	
CD 111	3169	2104	2637	2322	3292	2799	2804	2921	4839	3650	3803
T.BR 18-Terena	2761	1770	2266	1300	2736	2148	2061	2416	5069	3063	3516
IAPAR 53	3367	1532	2449	2169	2665	2356	2397	-	-	-	-
OCEPAR 16	3321	1791	2556	2048	3139	2321	2503	-	-	-	-
CEP 24	-	-	-	-	-	-	-	2984	5021	3150	3718
Mean (Standards)	3150	1698	2424	1839	2847	2275	2320	2700	5045	3107	3617

MAINTENANCE AND DISTRIBUTION OF FOUNDATION SEED

COODETEC commissions protected cultivars according to law nº 9456/97, so that seed companies can cultivate and commercialize it under agreement. Also, COODETEC has regional representatives under its own management supervision, who distribute and commercialize the seeds. Small quantities of seeds for research purposes are available upon request at the address above.

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