

## CD 108 - wheat cultivar

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Received 17 March 2004

Accepted 22 May 2004

**ABSTRACT** - 'CD 108' was developed by CIMMYT in Mexico and selected by COODETEC at the 29<sup>th</sup> IBWSN, in Palotina, State of Paraná, Brazil, in 1997. This is a cultivar of high industrial quality, with a short cycle, low plant height, lodging resistance, good grain, and a mean grain yield of 2585 and 2798 kg ha<sup>-1</sup> in the Regions 6 (north) and 7 (center-west) in the State of Paraná, respectively.

**Key words:** COODETEC's breeding program, wheat cultivar, CD 108

### INTRODUCTION

The Wheat Breeding Program of COODETEC is intended to meet different environmental demands. Yield potential, industrial quality, tolerance to spike sprouting, diseases, drought, acid soils, and natural threshing as well as lodging resistance, high tiller number, response to fertilizer, and grain yield adaptability and stability are the main characteristics that are being improved. CD 108 has yield potential, lodging resistance, and industrial quality.

### PEDIGREE AND BREEDING METHODS

Wheat cultivar CD 108 (*Triticum aestivum* L.) was developed by CIMMYT (International Center for Corn and

Wheat Breeding) in Mexico. F<sub>1</sub> seeds were obtained from the cross of the parents 'TURACO' and 'TAM 200' (Figure 1). Mass selection was used in the selection of the F<sub>2</sub> and F<sub>3</sub> populations, which consists in the selection of the best plants, whereupon these plant seeds are mixed and used to obtain the next generation. 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 used for the selection of the F<sub>4</sub> and F<sub>5</sub> populations. In F<sub>6</sub>, numerous sib lines were selected, which were shown at the 29<sup>th</sup> International Bread Wheat Screening Nursery (IBWSN) of CIMMYT and handed on to many Wheat Breeding Programs in various countries. This experiment was conducted in Palotina – PR, in 1997, by COODETEC's Wheat Breeding Program. Plot number 274 was selected, which gave origin to the cultivar CD 108.

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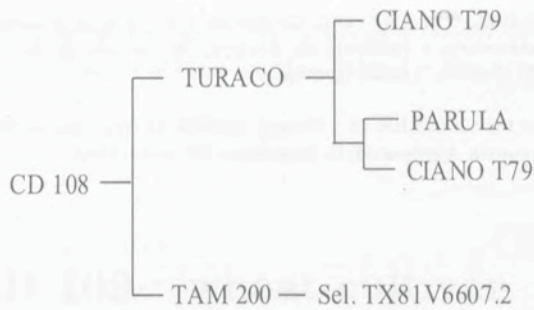


Figure 1. CD 108 pedigree

## PERFORMANCE

CD 108 was tested under the experimental designation 'CDI 2004'. After pre-evaluations in experiments in 1998, 1999, and 2000 in Cascavel and Palotina, State of Paraná, the cultivar was evaluated at different locations for several years in the Adaptation Regions 6 (north), 7 (center-west) of Paraná (IAPAR 2003). Table 1 displays the mean grain yield efficiency of several cultivars in the Regions 6 and 7 of the State of Paraná. Cultivar CD 108 presented a grain yield efficiency of 7% and 9% above the mean, respectively. The cycle of CD 108 is short and the best reference is cultivar BR 18 -Terena (Sousa 2002) with a similarly short cycle. In this case, CD 108's superiority percentages in grain yield correspond to 15% and 16%, respectively, for that same region. Due to CD 108's good performance, it was indicated for cultivation in the regions 6 and 7 in Paraná State (IAPAR 2003), and registered on July 10, 2003, with the National Service of Cultivars Protection (SNPC), under nr. 00492 (MAPA 2003). The indication for cultivation was extended to Region 8 of Paraná, 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.

Table 1. Cultivar CD 108 and standard grain yield means (kg ha<sup>-1</sup>) in regions 6 and 7 in the State of Paraná in two years

Cultivars	Region 6			Region 7		
	2001	2002	Mean	2001	2002	Mean
CD 108	3269	1901	2585	3231	2365	2798
T. BR 18-Terena	2761	1770	2266	2736	2111	2424
IAPAR 53	3367	1532	2449	2665	2436	2551
OCEPAR 16	3321	1791	2556	3139	2320	2730
Mean (Standards)	3150	1698	2424	2847	2289	2568

## OTHER CHARACTERISTICS

The plant height of CD 108 is low (from 55 to 80 cm), and the cycle short (from 48 to 61 days to flowering, and 100 to 121 days to maturity). Mean values of these characteristics were 67 cm, 53 days, and 115 days respectively, which can vary according to environmental conditions, sowing date, and soil type. An analysis of the industrial quality revealed a mean general gluten force (W) of  $363 \times 10^{-4}$  Joules. The weight of one hectoliter and of a thousand seeds amounted to 77 kg hL<sup>-1</sup> and 34 grams, respectively. CD 108 was classified as lodging resistant, moderately resistant to moderately susceptible to spike sprouting, and susceptible to acid soils. In relation to the main diseases, CD 108 was classified as moderately susceptible to *Blumeria graminis* f.sp. *tritici*, which according to Reis et al. (2001) is the main disease of winter cereals. It was classified as moderately resistant to *Bipolares sorokiniana*, moderately susceptible to *Septoria tritici* and *Stagonospora nodorum*, moderately resistant to *Puccinia triticinai*, and susceptible to *Fusarium graminearum*. Top characteristics of CD 108 are a high grain yield potential, an extremely short cycle to flowering and maturation, high industrial quality, lodging resistance, and an excellent grain type (Franco and Marchioro 2003).

## MAINTENANCE AND DISTRIBUTION OF FOUNDATION SEED

COODETEC commissions protects cultivars according to law n° 9456/97, so that seed companies can cultivate and commercialize them 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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