

## ITEMS FROM BRAZIL

**BRAZILIAN AGRICULTURAL RESEARCH CORPORATION — EMBRAPA TRIGO  
CP 3081, 99.050–970 Passo Fundo, Rio Grande do Sul, Brazil.***Performance of wheat cultivars in Rio Grande do Sul state, Brazil, 2018.*

Ricardo Lima de Castro, Eduardo Caierão, João Leonardo Fernandes Pires, Aloisio Alcantara Vilarinho, and Pedro Luiz Scheeren; and Marcelo de Carli Toigo and Rogério Ferreira Aires (DDPA/SEAPDR, C.P. 20, 95.200-970 Vacaria, Rio Grande do Sul, Brazil).

The Brazilian Commission of Wheat and Triticale Research (BCWTR) annually conducts the State Test of Wheat Cultivars in the state of Rio Grande do Sul (STWC-RS), which aims to support the indications of cultivars. This work has the objective to evaluate wheat cultivar grain yield performance of the STWC-RS in 2018. The grain yield performance of 30 wheat cultivars (Ametista, BRS 327, BRS Belajoia, BRS Marcante, BRS Reponde, CD 1303, CD 1705, Esporão, FPS Amplitude, FPS Certero, Inova, LG Cromo, LG Fortaleza, LG Oro, LG Supra, ORS 1401, ORS 1402, ORS 1403, ORS 1405, ORS Madrepérola, ORS Vintecinco, TBIO Alpaca, TBIO Audaz, TBIO Iguaçu, TBIO Noble, TBIO Sintonia, TBIO Sinuelo, TBIO Sonic, TBIO Sossego, and TBIO Toruk) was studied in 12 environments (Coxilha, Cruz Alta, Passo Fundo–season 1, Passo Fundo–season 2, Vacaria–season 1, Vacaria–season 2, Augusto Pestana, Eldorado do Sul, Ijuí, Santo Augusto, São Borja, and Três de Maio), in the state of Rio Grande do Sul (RS) in 2018. The experiments were carried out in a randomized block design with three or four repetitions. Each plot consisted of five 5-m rows with 0.2-m spacing between rows and a plant density of ~330 plants/m<sup>2</sup>. Grain yield data (kg/ha) were subjected to individual analysis of variance (for each environment) and a grouped analysis of variance (for all environments). The grouped analysis of variance employed a mixed model (fixed cultivar effect and randomized environment effect). The grain yield performance of the wheat cultivars was evaluated by analysis of adaptability and stability, employing the method of distance from the ideal cultivar, weighed by the coefficient of residual variation, proposed by Carneiro (1988). In this analysis, the ideal cultivar was considered as the cultivar with a high grain yield, a high stability, a low sensitivity to adverse conditions of unfavorable environments, and the ability to respond positively to improvement of favorable environments. The general average of the STWC-RS in 2018 was 4,184 kg/ha. The experiment conducted in Coxilha had the highest average wheat grain yield of 5,814 kg/ha. The maximum wheat grain yield was 6,781 kg/ha in Coxilha (cultivar TBIO Sinuelo). Cultivars TBIO Audaz, CD 1705, ORS 1402, ORS Vintecinco, and ORS 1405 had adaptability and stability in favorable environments (environments with an average wheat grain yield higher than that of the general average). Cultivars ORS 1402, TBIO Sossego, ORS Vintecinco, CD 1303, and LG Supra had adaptability and stability in unfavorable environments (environments with an average wheat grain yield lower than that of the general average). In general, averaged over all environments, ORS 1402 (4,602 kg/ha), TBIO Audaz (4,611 kg/ha), ORS Vintecinco (4,415 kg/ha), TBIO Sossego (4,428 kg/ha), and CD 1705 (4,436 kg/ha) came closest to the ideal cultivar.

**Reference.**

Carneiro PCS. 1998. New methodologies for analyzing the stability and adaptability of behavior. Ph.D. Thesis (Genetics and Breeding), Post Graduate Program in Genetics and Breeding, Federal University of Viçosa. 168 pp.