III. CONTRIBUTIONS

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 the state of Rio Grande do Sul, Brazil, 2019.

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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), to support the indications of cultivars. This work evaluated wheat cultivar grain yield performance of the STWC-RS in 2019. The yield grain performance of 30 wheat cultivars (Ametista, BRS 327, BRS Belajoia, BRS Marcante, BRS Reponte, CD 1303, Celebra, Esporão, FPS Amplitude, FPS Certero, Inova, LG Cromo, LG Fortaleza, LG Oro, LG Supra, ORS 1401, ORS 1402, ORS 1403, ORS 1405, ORS Citrino, ORS Madrepérola, ORS Vintecinco, TBIO Audaz, TBIO Iguaçu, TBIO Ponteiro, TBIO Sintonia, TBIO Sinuelo, TBIO Sonic, TBIO Sossego, and TBIO Toruk) was studied in 14 environments (Coxilha, Cruz Alta – seasons 1 and 2, Passo Fundo – seasons 1 and 2, Sertão, Vacaria – season 1, Vacaria – season 2, Vacaria – season 3, Augusto Pestana, Ijuí, Santo Augusto, São Borja, and Três de Maio) in Rio Grande do Sul in 2019. The experiments were 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 approximaely 330 plants/m^2. Grain yield data (kg/ha[1]) 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). 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, as proposed by Carneiro (1988). In this analysis, the ideal cultivar was that with high grain yield, high stability, 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 2019 was 4,676 kg/ha. Coxilha had the highest average wheat grain yield: 6,589 kg/ha. The maximum wheat grain yield was 7,362 kg/ha in Coxilha (cultivar Inova). Cultivars BRS Reponte, Inova, CD 1303, ORS 1403, and FPS Certero had adaptability and stability in favorable environments (environments with average of wheat grain yield higher than the general average). CD 1303, ORS Citrino, FPS Certero, BRS Reponte, and ORS Vintecinco had adaptability and stability in unfavorable environments (environments with average of wheat grain yield lower than the general average). In general, the average of all environments, CD 1303 (5,130 kg/ha[1]), FPS Certero (5,063 kg/ha), BRS Reponte (5,147 kg/ha), ORS Citrino (4,954 kg/ha), and Inova (5,016 kg/ha) were the cultivars that came closest to the ideal cultivar.

Reference.

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