

## **Estimate of Heterosis and Heritability of Some Yield and Growth Characters of Bread Wheat (*Triticum aestivum* L.) Varieties in Wudil, Nigerian Sudan Savannah**

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The field experiment was conducted at Kano University of Science and Technology Wudil, Gaya research farm under irrigation conditions to estimate the heterosis and heritability of five different bread wheat varieties. The treatment consists of five different bread wheat varieties; Atilla (AT), Borloug (BO), Seri (SE), Reyna 28 (RE) and Pavan (PA) and was replicated three times using Randomized Complete Block Design (RCBD) with space isolation. Genotypes are significantly different for the mean average for plant height, number of tillers per plant, number of spikes per plant, number of grains per spike, number of leaves per plant, length of the spike, length of the root, weight of grain and 1000 grain weight. The maximum heterosis and heritability were recorded in AT x SE (13.89 cm) and RE x PA (97 cm) for plant height, AT x RE (25.9) and BO x PA (90.0) for number of tillers per plant, BO x PA (29.86) and BO x PA (90.0) for number of spike per plant, PA x RE (8.71) and BO x RE (95.7) for number of grain per spike, SE x RE (1.89 cm) and BO x RE ( 96.7 cm) for length of spike, BO x AT, BO x SE and AT x SE ( 11.11 cm) and BO x SE (87.5 cm) for length of roots, AT x SE (74.0 g) and AT x RE ( 93.3 g) for weight of grain per spike and BO x SE (9.16 g) and BO x SE, AT SE (86.5 g) respectively. According to the results, it could be concluded that the cross combination of BO x AT recorded better agronomic performance and greater mean values of yield and weight. It showed a significant positive heterosis and very high to moderately high heritability. Thus, the hybrid combination could be recommended for improve yield and enhance biological production of wheat plant. Therefore, Borlaug and Atilla varieties are strongly recommended for commercial production under the local environment of Wudil, Kano state of Nigeria.

**Keywords:** Bread wheat, Growth characters, Heritability, Heterosis, Yield