Fourth Article: (Sharing with another inside and outside the specialization- Published).

Article title	**Genetic studies on yield and some related characters in two bread wheat crosses using five population model.**
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Abstract

This study were implemented within four growing seasons from 2017/2018 to 2020/2021. The five populations (P1, P2, F1, F2 and F3) of two crosses of bread wheat (Misr 3 x Shandaweel-1 and Giza 168 x Sakha 94) were evaluated in two locations during 2020/2021 growing season, at West West El-Minia and Sids Agricultural Research Station, Agricultural Research Center, Egypt, In order to determine the mode of gene action and the inheritance pattern of plant height, no. of spikes plant-1, no. of kernels spike-1, 100-kernel weight and grain yield plant-1. The t-test showed significant differences among parental genotypes of each cross for all studied characters. The mean effects (m) were highly significant for all characters under the study in the two crosses and locations, indicating the ability to enhance the performance of these characters by pedigree selection. Scaling test revealed the presence of nonallelic interactions (epistasis) in the most studied characters. Dominance gene effects were generally greater than additive ones in most characters. Gene effects varied among characters, whereas the dominance and duplicate dominance beside additive gene effects were found to play important role in the inheritance of most studied characters. The desired significant and highly significant positive heterotic effects to mid-parents for two crosses were detected in the two locations. Broad sense heritability estimates displayed moderate values in most characters. The highest expected genetic gain was found to be correlated with high heritability in narrow sense estimated in all studied characters.