

**DETECTING EPISTASIS, GENETIC CORRELATIONS
AND NEW RECOMBINANT LINES FOR GRAIN
YIELD AND ITS COMPONENTS IN BREAD
WHEAT (*Triticum aestivum* L.) USING
TRIPLE TEST CROSS ANALYSIS**

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ABSTRACT: In two crosses of bread wheat (Sakha 93 x Gemmeiza 7 and Giza 168 x Gemmeiza 9) triple test cross analysis was applied to study gene action, genetic correlations and predicating of new recombinant lines for days to heading, plant height, flag leaf area, number of spikes/plant, number of grains/spike, 1000-grain weight, spike grain weight and grain yield /plant. Results revealed that epistatic gene effects played an important role in the genetic system for the studied characters for the two crosses. The types of epistasis (additive x additive, additive x dominance and dominance x dominance) were significant for all studied characters. Both additive and dominance genetic components were significant and involved in the genetic system for most characters in both crosses. The average degree of dominance was in the range of overdominance for number of spikes/plant in the first cross and spike grain weight for the second cross. While for the remaining characters, additive gene effects were more pronounced. The (F) value was positive and significant for 1000-grain weight in two crosses, suggesting that dominant genes controlled these characters were unidirectional. The highest proportion of inbreds exceeded to outperform parental range in cross 1 for days to heading and flag leaf area. Epistasis, additive and dominance genetic correlations indicated that positive and significant epistasis, additive and dominance genetic correlation were obtained between grain yield/plant with number of spikes/plant, number of grains/spike and 1000 grain weight in both crosses.

Key words: Wheat, additive dominance, epistasis, genetic correlation.