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Genetical Studies in Common Wheat (*Triticum aestivum*)

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A HALF diallel set of crosses involving the six parental lines were used to estimate the type and relative amount of genetic variance components for; grain yield per plant, number of spikes per plant, number of kernels per spike, 1000-kernel weight, protein percentage, and gluten content.

Significant additive type of gene action was detected in all cases. With the exception of number of spikes per plant, significant dominance effect was detected in all traits.

Studies of nature and degree of dominance revealed the existence of; over dominance for all traits except number of spikes per plant where partial dominance was the case

The negative and positive alleles were unequally distributed among the parental population in all cases except the grain yield/plant.

High estimates for heritability in the broad sense were accompanied by moderate to low values for the narrow ones were obtained for most traits.

The correlation between parental performances and their order of dominance revealed that few number of spikes per plant, number of kernels per spike, low protein content and heavy weight of 1000-kernel behaved as dominant traits. No particular trend could be detected for the rest two traits.

The ultimate goal of any plant breeder is to develop new varieties of high yielding capacity and superior quality. To accomplish this, must divise a breeding program which will allow him to produce and reproduce genotypes that represent somewhere near optimum combinations of genes for a particular area. An analysis based on large number of progenies produced from diverse parents is expected to give reliable estimates. The breeder should know, not only what portion of the total variation among plants is a direct result of genetic differences, but also the nature of the genetic variation that exists.

The present work was carried out to study the genetic behavior of yield and its components, and protein and gluten contents to formulate the most efficient breeding procedure.