

Genetical Studies on Durum Wheat (*Triticum durum* L.)

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A HALF diallel set of crosses involving five parental lines were used to estimate the type and relative amount of generic variance components for grain yield per plant, number of spikes per plant, 1000-kernel weight, protein percentage, and fermentation time.

Genotype mean squares for all traits studied were highly significant. Additive type of gene action was found to reach the level of significance in most cases. Dominance gene effect was larger in magnitude than the additive ones and appeared to be the more prevailing for all the studied traits. High to moderate estimates for heritability in the broad sense were accompanied by moderate to low for the narrow ones were detected for most traits.

Studies on the nature and degree of dominance revealed the existence of over dominance for all the traits except protein percentage where partial dominance was obtained. The negative and positive alleles were equally distributed among the parental population in all cases. The correlation between parental performances and their order of dominance revealed that low grain yield and 1000-kernel weight, and few number of spikes per plant behaved as dominant traits. No particular trend could be detected for the other two traits.

The new Egyptian policy of wheat production is to increase the area cultivated by durum wheat in Upper Egypt because of its high tolerance to the prevalent