

**ESTIMATE OF COMBINING ABILITIES, HETEROSIS AND HERITABILITY OF SOME IMPORTANT CHARACTERS OF TOMATO (*Lycopersicon esculentum*, Mill.)**

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**ABSTRACT**

*Five tomato cultivars were crossed in a diallel system in one direction. Seeds of the 10 F<sub>1</sub>'s as well as the 5 parental cultivars were produced and the various genotypes were grown at two locations (Abbies and El-Noubaria) for evaluation, in four winter and summer seasons during the years of 1996 to 1999. Combined analyses of variance for important vegetative and yield characters were conducted. General and specific combining abilities, heterosis, and heritability in both the narrow and broad senses were estimated. Results proved the existence of marked heterosis, either over the mid-parental value or that of the best parent for the studied characters of yield components. The estimates of heritability in broad and narrow senses reflected relatively more importance for the non-additive gene effects than the additive ones, in the inheritance of yield characters. Results of GCA and SCA indicated that a particular cultivar or hybrid can not be used to evaluate all interesting characters with equal efficiency.*

*Key words: Tomato, Combining Ability, Heritability, Heterosis, Combine analysis.*