



**MODE OF GENE ACTION, HETEROSIS AND
INBREEDING DEPRESSION FOR YIELD AND ITS
COMPONENTS IN TOMATO *SOLANUM LYCOPERSICUM*
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ABSTRACT



The objectives of this study were to determine heterosis and the type of gene action controlling some economical traits of tomato. Six populations of the cross CastleRock × CLN 2498E (P1, P2, F1, F2, BC1 and BC2) were used to study the genetic parameters of tomato traits. Means of the six populations were widely differed for most of the studied traits. One or more of the three scaling tests (A, B and C) were significant for some studied traits indicating that additive dominance model was inadequate to know the role of the type of gene action in the inheritance of these traits. Additive gene effects were found to be important in the inheritance of average fruit weight. Dominance and dominance × dominance gene effects were important in the inheritance of plant height, number of branches per plant, fruit firmness and early yield. Heterosis relative to better parent was present for number of branches per plant, early yield, total yield and fruit firmness. The heritability estimates in broad sense were high for early yield, total yield, average fruit weight, fruit firmness and TSS content. However, heritability estimates in narrow sense were high for early yield and average fruit weight and moderate for TSS content. The estimated potence ratio (P) was larger than one for all studied traits except for average fruit weight and TSS content.