RESEARCH ARTICLE

GENE ACTION STUDIES ON SEED YIELD AND QUALITY TRAITS IN RED SWEET PEPPER (*CAPSICUM ANNUUM* L. *GROSSUM*)

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Abstract: Selection of suitable breeding methodologies in bringing desirable improvement in crop require the complete knowledge about the nature of gene action involved in the inheritance of quantitative and quality traits. Gene action of fruit yield and quality traits in sweet pepper (*Capsicum annuum* L. *grossum*) were studied through half-diallel analysis excluding reciprocals of 15 F_1 hybrids derived by crossing 6 parental lines. The present study indicated the preponderance of non-additive gene action for days to first flowering, fruit set, number of fruits per plant, fruit weight, fruit yield kg per plant, days to first ripe fruit harvesting , number of seeds per fruit, seed weight per fruit, seed yield per fruit, thousand seed weight and percent seed recovery. For fruit yield per plant dominant component of variance was observed which revealed the presence of non-additive gene action, hence heterosis breeding is required to be followed for exploitation of these traits. The preponderance of non-additive gene action in the inheritance of all the traits studied clearly suggested exploitation of heterosis breeding for the improvement of these traits and the presence of sufficient hybrid vigour in different hybrid combinations.

Keywords: Gene action, Sweet pepper, Variance, Half-diallel, Fruit yield

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