

## Hybrid vigour and combining ability studies for fruit quality characters in egg plant (*Solanum melongena* L.)

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(Accepted : February, 2006)

Hybrid vigour and combining ability of 45 egg plant hybrids obtained from the diallel mating (excluding reciprocals) of ten elite homozygous lines obtained from the Main Vegetable Research Station, Anand, Gujarat, India, were studied for different fruit quality characters. Maximum hybrid vigour was observed for total soluble sugars, while high heterosis was noticed for number of seeds per fruit and its ratio with fresh marketable fruit weight and mature fruit weight. Fresh marketable fruit weight had recorded moderate mid-parent heterosis to an extent of 81.17 per cent, and low heterobeltiosis and standard heterosis, to an extent of 39.05 and 27.50 per cent, respectively. High heterosis was observed in crosses involving at least one good parent, identified on the basis of mean performance for the trait. The combining ability analysis also revealed pre-ponderant non-additive gene action for majority of the fruit quality traits studied, indicating the importance of heterosis breeding for improvement of these traits. A perusal of the general combining ability effects of the parents studied revealed Bombay Gulabi and Surati Ravaiya to be good general combiners for fresh marketable fruit weight. These parents were also noticed to be good combiners for mature fruit weight, seed number/mature fruit weight and total soluble sugars. Desirable specific combining ability effects were noticed in several hybrids for the various fruit quality traits studied. Among these, AB 98-13 x Bombay Gulabi and Surati Ravaiya x JBPR 1 hybrids had recorded high mean, heterosis and specific combining ability effects for fresh marketable fruit weight in addition to desirable levels of total phenols and fruit drymatter. The hybrid, Surati Ravaiya x JBPR 1 had also recorded desirable heterosis and specific combining ability effects for total soluble sugars. Hence, these hybrids are identified as potential high yielding, heterotic and quality egg plant hybrids for commercial exploitation.

**Key words** : Egg plant, Hybrid vigour, Combining ability, Fruit quality