

## **Combining ability analysis in bitter gourd (*Momordica charantia* L.) for potential quality improvement**

### **ABSTRACT**

Combining ability analysis provides useful information for the selection of parents, also information regarding the nature and magnitude of involved gene actions. Crops improvement involves strategies for enhancing yield potentiality and quality components. Targeting the improvement of respective characters in bitter gourd, combining ability and genetic parameters for 19 characters were estimated from a 6×6 full diallel analysis technique. The results revealed that the variances due to general combining ability (GCA) and specific combining ability (SCA) were highly significant for most of the important characters. It indicated the importance of both additive and non-additive gene actions. GCA variances were higher in magnitude than SCA variances for all the characters studied indicating the predominance of the additive gene effects in their inheritance. The parent P2 (BG 009) appeared as the best general combiner for earliness; P1 (BG 006) for number of fruits, average single fruit weight and fruit yield; P4 (BG 027) for node number of first female flower and days to seed fruit maturity; P3 (BG 011) for fruit length and thickness of the fruit flesh; P5 (BG 033) for 100-seed weight; and P6 for number of nodes per main vine. The SCA effect as well as reciprocal effect was also significant for most of the important characters in different crosses.