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RESEARCH ARTICLE

Commercial exploitation of hybrid vigour in cucumber (*Cucumis sativus* L.)

■ S.K. SINGH, G.R. KISHOR AND J.P. SRIVASTAVA

SUMMARY

The significant heterosis was observed for all the characters but none of these cross combinations exhibited useful heterosis for all the traits. However, the maximum heterosis of 172.38 per cent for yield per vine was observerd in cross EC-43342 x BIHAR -1 and this cross also performed better for other traits like node number of first male and female flower , fruit length and fruit diameter .The significant heterosis for yield per vine was also observed in crosses EC-43342 x C -99 -10 (113.77%) ,PCUC-15-(112.09%) PCUC-15 x 98-6(102.15%) and BIHAR-1 x C-99-10(76.97%) .These crosses had best heterotic effect for yield due to the better performance of characters like fruits length, fruit diameter, fruit weight and number of fruits per vine .Significant and desirable hertersis in aforesaid crosses is due to dominance and dominance type of interaction.

Key Words : Hybrid vigour, Heterosis, Cucumber

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Cucumber (*Cucumis sativus* L.) is an important vegetable crop of tropical and subtropical regions of the world ,grown successful in plains as well hills. The reasonable yield potential in this crop based on various observations is reported to be much more than what has been achieved so for. The plant in probably indigenous to north India. It is widely cultivated though out India and in the tropical and subtropical parts of the word and it is a popular vegetable crop. Numerous varieties are under cultivation, fruits of some of the varieties are 25-38 cm long and 8-10 cm diameter with fairly thick rind, while other yield small, ovoid fruits with thin and smooth rind. They require a warm climate, but not so warm as for melons. They can be grown both in the plains and on the hills, and require a liberals supply of manure. Therefore, it is reported to be much more than what has been extensively expolored and utilized for boosting up yield in a number of economically important species. Cucumber has great scope to utilize hybrid vigour commercially because of its monoecious nature of flowering, more number of seeds per fruit and cultivation around the year throughout the country. Heterosis breeding has come to play a pivot role in crop improvement for high production and productivity .The extent of heterosis over superior/economic parent is a prerequisite for commercial exploitation of hybrid vigour in cucumber.

MEMBERS OF THE RESEARCH FORUM

Author to be contacted :
S.K. SINGH, Department of Agricultural Botany, C.C.R. (P.G.) College, MUZAFFARNAGAR (U.P.) INDIA

Address of the Co-authors:
G. R. Kishor, Department of Horticulture, C.C.R. (P.G.) College, MUZAFFARNAGAR (U.P.) INDIA

J.P. SRIVASTAVA, Department of Genetics and Plant Breeding C.S. Azad Universty of Agricultural and Technology, KANPUR (U.P.) INDIA

MATERIALS AND METHODS

The present investigation was conducted with eight genetically diverse genotypes of cucumber *viz.*, PCUC-15, EC-43342, PCUC-15-1, CHC-2, BIHAR-1, C-99-12, C-98-6 and C-99-10, crossed in dialer fashion without reciprocal .The parents along with 28 F_1s were sown in randomized block design with three replications during Zaid, 2002. Observations were recorded on five randomized taken plants in each parents and F_1s in each replication for days to first male and female flower, node number of first male and female flower, fruit length, fruit diameter, fruit weight, no. of fruits per vine, vine length and