Performance of various genotypes of chilli under South Gujarat conditions

S.N. SARAVAIYA, P.B. KOLADIYA, D.T. DESAI, D.R. BHANDERI AND H.B. PATEL

ABSTRACT

Field experiment was conducted to study the performance of various genotypes of chilli under South Gujarat conditions at Regional Horticultural Research Station of Navsari Agricultural University, Navsari as voluntary centre during Rabi season of 2009. The experiment was laid out in randomized block design with three replications, which included nine genotypes of chilli. The genotypes were transplanted with great care in the field during the month of November 2009 at the spacing of 60 cm X 60 cm. Differences among the genotypes for growth and yield parameters were found significant. The genotype ACS-06-2 was found significantly superior than all three checks, recorded the green fruit yield of 11.39 t/ha.

C

Chilli or hot pepper (Capsicum species, 2n=2x=24), belongs to the family solanaceae, is a tropical spice crop commercially grown throughout the world and is used in almost all dishes. India is the largest producer and exporter of chilli in the world. Chilli fruits are good source of Vit. A and C. (Desai and Patil,1984; Singh, 1993).

In India, chilli is grown in almost all states. Andhra Pradesh has been leading both in area and production of chilli. The area under Gujarat is 33,260 hectares with the green chilli production of 1,37,992 MT (Anonymous,2009). In food and beverage industries, chilli is being used in the form of oleoresin which permits even distribution of color and flavor in food. Capsaicin is the pungent principle found in chilli (Singh, 2004).

There is a large variation in fruit color, shape and size in chilli. Varieties having thin pericarp, low seed content and strong spike are suitable for dried chilli. The production of chilli is greatly fluctuating in respect to cultivars and environment under which they grow. The information generated by conducting the IET/SSVT/LSVT/AVT trails on a particular crop on large scale will be a valuable guidance to the research workers, olericulturist and plant breeder for their breeding program in other regions (Chadha,2002).

MATERIALS AND METHODS

Total nine genotypes with three checks of chilli were evaluated in field conditions at Regional Horticultural Research Station, ASPEE College of Horticulture and Forestry of Navsari Agricultural University, Navsari as voluntary centre during the Rabi season of 2009. The experimental material i.e. seed packets of all the genotypes were allotted from the Project Coordinator, AICRP (Vegetable Crops), IIVR, Varanasi, U.P. for conducting the trial. The genotypes were transplanted with great care in the field during the month of November 2009 in Randomized Block Design with three replicates, at the spacing of 60 cm x 60 cm. Details of genotypes are given in Table 1.

Five randomly chosen plants were tagged from each genotype in each replication were used for recording observation on growth and other yield contributing parameters. Fruit yield data were recorded picking wise and calculated on hectare basis.

The research data on growth parameters and fruit yield were subjected to statistical analysis as suggested by Panse and Sukhatme (1984).

RESULTS AND DISCUSSION

The performance of various genotypes of chilli under...
south Gujarat condition is presented in Table 1. Analysis of variance showed that genotypes were significantly different for all characters under study that indicated presence of wide variability in chilli genotypes.

Among the different genotypes, the plant height differences was found significant. Significantly the highest plant height (110.60 cm) was observed for the genotype BCC-1. The lowest plant height (57.83 cm) was recorded for the VR – 338.

For the fruit length trait, the differences among the genotypes were observed significant. The highest value (19.00 cm) and lowest value (9.50 cm) was observed for the genotypes GVC-111 and CCH-05-01, respectively.

Significant differences were observed among the genotypes for fruit width. Significantly the highest (1.24 cm) and lowest fruit width (0.83 cm) was observed for the genotypes BCC-1 and PC-2062, respectively.

Significantly the maximum (50.33 g) and minimum (21.93 g) values for weight of 10 fruits were exhibited by the genotypes VR-338 and CCH-05-01, respectively.

The results indicated that fruit circumference revealed significant differences among the genotypes. Significantly the highest fruit circumference (4.40 cm) was recorded in BCC-1 followed by LCA-206. Lowest fruit circumference (3 cm) was recorded with the genotype PC-2062.

Among the various genotypes the green fruit yield exhibited significant differences. Significantly the highest green fruit yield was recorded for ACS-06-2 (11.39 t/ha) as well as GVC-111 (10.60 t/ha) while it was recorded minimum in LCA-206 (6.12 t/ha).

Authors’ affiliations:
P.B. KOLADIYA, Vegetable Research Scheme, Regional Horticultural Research Station, Navsari Agricultural University, NAVSARI (GUJARAT) INDIA
Email : koladiya_22@yahoo.co.in
D.T. DESAI AND H.B. PATEL, Department of Plant Breeding, Navsari Agricultural University, NAVSARI (GUJARAT) INDIA
Email : dtdesai19b@yahoo.com; hirenpkg@yahoo.co.in
D.R. BHANDERI, Department of Horticulture, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, NAVSARI (GUJARAT) INDIA
Email : darshanbhanderi@yahoo.com

REFERENCES