RESEARCH ARTICLE

SELECTION PARAMETERS OF CHILLI (*CAPSICUM ANNUUM* L.) GENOTYPES FOR YIELD AND RELATED TRAITS

Ritu Rani Minz*[1], Vivek Kumar Kurrey[1], John P. Collis[2] and Kuldeep Singh Rajwat[2]

[1]Department of Vegetable Science, Indira Gandhi Krishi vishwavidalaya Raipur (C.G) 492012
[2]Department of Horticulture, Sam Higginbottom Institute of Agriculture Technology and Sciences, (Deemed to – be –University) 211007, (U.P.)
Email: rituminz1@gmail.com

Received-23.01.2017, Revised-07.02.2017

Abstract: Fifteen genotypes of chilli were evaluated in RBD with three replications was conducted at Vegetable Research Farm, Department of Horticulture, Allahabad School of Agriculture Sam Higginbottom Institute of Agriculture, Technology and Sciences (Deemed to-be-University), Allahabad during the Rabi season of 2014-2015 to study the selection parameters of chilli genotypes for yield and related traits. Altogether fifteen genotypes of chilli laid out in Randomized Block Design (RBD) with three replication. All these fifteen chilli genotypes showed significant variation in characters *viz.*, average fruit weight (g), number of seeds per fruits , weight of Seeds /fruits (mg), number of fruits /plant, Fruit yield per plant (g), yield per hectare (q), yield of dry green chilli (q ha-1), fruit set percent, estimation of ascorbic acid (mg/100g), estimation of capsaicin (°Brix). The mean of the different traits for 15 genotypes of Chilli (*Capsicum annum* L.) with three replications treatment details viz. LCA-334(C), KA-2(C), 12CHIV AR-1, 12CHIV AR-2, 12CHIV AR-3, 12CHIV AR-4, 12CHIV AR-5, 12CHIV AR-6, 12CHIV AR-8, IIHR- 2006, ACS- 08-09, HC- 50, KASHI ANMOL, HC- 68 and G4 (Local) were tried in Randomized Block Design (RBD). On the basis of fifteen genotypes studied, for different characters genotype KA-2(C) (22.01q) was found superior in terms of fruit yield per hectare followed by 12CHIV AR-2 (17.72q) and LCA-334(C) (13.37q). The genotype 12 CHIV AR-5 recorded significantly for average fruit weight (4.65 (g)) and Weight of Seeds/fruits (mg) (249.08). However, the genotype 12CHIV AR-4 showed the maximum number of seeds per fruits (46.22). The highest Number of fruits/plant was noticed in genotype 12CHIV AR-8 (116.03) and maximum yield per hectare (q) recorded in genotype KA-2(C) (621.98 q) while, maximum ascorbic acid content (mg/100g) was noticed in genotype 12 CHIVAR-6 and highest capsaicin (°Brix) content was observed in LCA-334(C).

Keywords: Chilli (*Capsicum annuum* L.), Evaluation, Genotypes, Yield

REFERENCES

Asati, B.S. and Yadav, D.S. (2004). Diversity of horticultural crops in north eastern region. ENVIS Bull. Himalayan Eco. **12**:1-11.

AVRDC (1986). AVRDC adds pepper as new principal crop. Asian Vegetable Research and Development Centre, Center Point 5(1):1.

Basu, S.K. and De, A.K. (2003). Capsicum: historical and botanical perspectives. In: De AK (ed) The genus Capsicum. Taylor & Francis, London, pp 1–15.

Cochran, H. L. (1936). Some factors influencing growth and fruit setting in the pepper (*Capsicum frutescens* L.). Cornell Agr. Expt. Sta. Memoir. 190 p.

Dhaliwal, M.S. (2007). Solanaceous vegetables. In: Handbook of vegetable crops. Kalyani Publishers, Ludhiana, India

Ericson, A. N. and Markhart, A. H. (2001). Flower production, fruit set and physiology of bell pepper during elevated temperature and vapor pressure deficit. J. American Soc. Hort. Sci. 126(6):697-702.

Gomez, K. A. and Gomez, A. A. (1984). *Statistical Procedures in Agricultural Research*, 2nd edition, Willey, New York, pp. 680.

Greenleaf, W.H. (1986). Paper Breeding. *In:* Breeding vegetables crop. Baset MJ (ed). The Avi Publishing C., USA. pp.68.

Indian Horticulture Database (2011). National Horticulture Board. Aristo Printing Press, New Delhi, pp 6–7

Jagota, S.K. and Dani, H.M. (1982). A new colorimetric technique for estimation of vitamin C using folin-phenol reagent. Annals of Bioch. **27** (1): 178-182.

Olarewaju, J. D. (1989). Effects of night temperature on fruit set and developments in sweet pepper (*Capsicum annuum* L.). Haryana J. Hort. Sci. 18(3):285-288.

Thresh, J.C. (1876). Isolation of capsaicin. The Pharmaceutical Journal and Transactions 6:941–947

Rani, P. U. (1996). Evaluation of chilli (*Capsicum annuum* L.) germplasm and its utility in breeding for higher yield and better quality. Maysore J. Agric. Sci. 30:343-348.

Rylski, I. and Spigelman, M. (1982). Effects of different diurnal temperature combinations on fruit set of sweet peppers. Scientia Hort. 17:101-106.

Wien, H. C., Tripp, K. E., Hernandez-Armetana, R. and Turner, A. D. (1989). Abscission of reproductive structures in pepper: causes, mechanisms and control. *In:* Tomato and Pepper Production in the Tropics. Proceedings of the International Symposium on Integrated Management Practices. Asian Vegetable Research and Development Centre, Shanhua, Taiwan.pp.150-165.

*Corresponding Author