

- [6] **Khodadabi, M. Fotokian, M. and Miransari, M. (2011).** Genetic diversity of wheat genotypes based on cluster and principal component analyses for breeding strategies. *Australian J. Crop Sci.*5(1): 17-24
- [7] **Kumar, B. (2013).** Indian Horticulture Database-2013, (eds). Mistry, N. C., Singh, B. and Gandhi, P. C. pp. 6.
- [8] **Kumar, B.M. Kantti, A. and Mallikarjunaiah, H. (2010).** Genetic divergence in chilli accessions. *Electr. J. Plant Breed.* 1 (5): 1363- 1366.
- [9] **Kumar, B. Lal, G. Ruchi, M. and Upadhyay, A. (2009).** Genetic variability, diversity and association of quantitative traits with grain yield in bread wheat (*TriticumaestivumL.*). *Asian J.Agril Sci.* 1 (1): 4-6
- [10] **Lahbib, K. Bnejdi, F. and Gazzah, M.E. (2013).** Selection of pepper parent from a collection of *Capsicum annum* landraces based on genetic diversity. *J. Plant Breed. and Crop Sci.* 5 (5): 68-72.
- [11] **Mahalanobis, P.C. (1936).** On the generalized distance in Statistics. *Proc. Nat. Inst. Sci.India*2:49-55.
- [12] **Pandit, M.K. and Adhikary, S. (2014).** Variability and Heritability Estimates in Some Reproductive Characters and Yield in Chilli (*Capsicum annumL.*) *Int. J. Plant and Soil Sci.* 3 (7): 845-853.
- [13] **Singh, S.P. (2007).** Production and management of spices. Agrihortica Publications, Junagadh, pp. 171-190.
- [14] **Yatung, T. Dubey, K.R., Singh, V. and Upadhyay, G. (2014).** Genetic diversity of chilli (*Capsicum annumL.*) genotypes of India based on morpho-chemical traits. *Aust. J.Crop Sci.*8 (1): 97- 102.

Author Profile



Bandla Srinivasis M.Sc. (Ag) Student, Department of Plant Breeding and Genetics, College of Agriculture, Vellayani, Trivandrum, India. He has completed his B.Sc. (Ag.) from Acharya N.G. Ranga Agricultural University, Hyderabad, India and taken PG admission (Plant Breeding and Genetics) in Kerala Agricultural University, Thrissur through ICAR admission 2013. His research area include screening for yield and leaf curl virus resistance in a huge amount of collections in bird chilli genotypes (*Capsicum frutescensL.*)

Beena Thomas is presently working as assistant professor, Department of Plant Breeding and Genetics, College of Agriculture, Vellayani, Trivandrum, India.

Sreenivas Gogineni is Ph.D. Student, Department of Plant Breeding and Genetics, College of Agriculture, Vellayani, Trivandrum, India.

Table 1: Distribution of 78 Chili genotypes in different clusters

Cluster No	No of genotypes	Cluster members
I	11	A1, A51, A16, A72, A12, A43, A23, A37, A39, A11, A40
II	24	A2, A25, A27, A8, A6, A64, A9, A58, A5, A54, A68, A33, A60, A19, A46, A47, A61, A17, A44, A18, A59, A65, A20, A35
III	1	A13
IV	13	A3, A35, A78, A66, A73, A49, A63, A69, A48, A14, A56, A21, A36,
V	9	A15, A22, A74, A77, A76, A53, A67, A10, A71
VI	7	A30, A31, A7, A41, A32, A73, A42
VII	3	A26, A38, A75
VIII	2	A4, A50
IX	8	A24, A28, A34, A52, A55, A57, A62, A70

Table 2: Intra and inter cluster distances (D^2) for 78 chili genotypes (D values given in parenthesis)

Clusters	I	II	III	IV	V	VI	VII	VIII	IX
I	18.08 (4.25)	23.45 (4.84)	37.06 (6.09)	21.50 (4.64)	26.85 (5.18)	27.39 (5.23)	51.31 (7.16)	115.37 (10.74)	44.90 (6.70)
II		11.44 (3.38)	30.57 (5.53)	15.23 (3.90)	17.29 (4.16)	19.88 (4.46)	49.38 (7.03)	136.99 (11.70)	48.71 (6.98)
III			0.00 (0.00)	39.61 (6.29)	35.82 (5.98)	35.29 (5.94)	61.03 (7.81)	82.35 (9.07)	36.25 (6.02)
IV				12.29 (3.51)	16.29 (4.04)	19.89 (4.46)	48.06 (6.93)	136.19 (11.67)	50.30 (7.09)
V					11.03 (3.32)	21.20 (4.60)	44.99 (6.71)	154.04 (12.41)	56.85 (7.54)
VI						15.15 (3.89)	54.65 (7.39)	138.26 (11.76)	51.44 (7.17)
VII							21.36 (4.62)	160.72 (12.68)	78.85 (8.88)
VIII								29.72 (5.45)	52.20 (7.23)
IX									12.73 (3.57)

Table 3: Percent contribution of sixteen characters towards diversity in bird chilli

Character	Times Ranked first	Contribution %
Number of days to first flowering	3	0.10
Number of primary branches	0	0.00
Number of secondary branches	11	0.37
Number of fruits per plant	814	27.11
Average fruit length (cm)	0	0.00
Average fruit width (cm)	0	0.00
Individual fruit weight (g)	0	0.00
Fruit yield per plant (g)	1834	61.07
Number of seeds per fruit	50	1.67
Plant height (cm)	146	4.86
Leaf pubescence	0	0.00
Incidence of leaf curl disease (V.I)	145	4.83
Number of white flies per plant	0	0.00
Number of aphids per plant	0	0.00
Number of thrips per leaf	0	0.00
Number of mites per leaf	0	0.00

Table 4: Cluster mean values of 16 different characters of 78 birds Chili genotypes

Cluster means	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16
Cluster -I	107.27	10.62	27.05	124.20	5.65	2.39	1.67	206.78	32.41	58.06	3	63.50	1.23	3.09	3.51	0.00
Cluster -II	108.25	11.05	29.08	108.09	4.64	2.22	1.03	106.01	17.72	52.15	3	62.52	0.41	3.10	3.40	0.00
Cluster -III	114.40	14.60	32.80	255.50	3.00	3.00	1.20	302.90	10.80	49.20	3	12.50	0.75	3.47	2.86	0.00
Cluster -IV	107.58	8.28	20.17	105.55	4.98	2.12	1.32	136.33	20.38	57.98	3	71.41	0.52	2.68	2.89	0.00
Cluster -V	103.30	7.80	20.90	147.80	4.19	2.21	0.83	114.13	14.18	52.14	3	60.56	1.26	3.06	2.96	0.00
Cluster -VI	109.50	7.50	21.54	162.51	4.37	2.17	0.91	144.54	31.81	46.77	3	37.70	0.34	2.78	4.22	0.00
Cluster -VII	109.50	9.00	24.23	147.43	4.33	2.70	1.03	134.83	26.57	61.50	5	67.77	1.56	3.60	1.83	0.00
Cluster -VIII	121.90	15.45	43.15	324.05	7.50	3.75	2.00	645.60	28.00	121.95	3	3.10	0.15	0.16	1.15	0.00
Cluster -IX	104.63	12.50	38.40	246.53	6.70	2.91	1.30	316.79	29.80	93.01	3	10.89	0.16	1.09	1.38	0.00

X₁ Number of days to first flowering X₉ Number of seeds per fruit
 X₂ Number of primary branches X₁₀ Plant height (cm)
 X₃ Number of secondary branches X₁₁ Leaf pubescence
 X₄ Number of fruits per plant X₁₂ incidence of leaf curl disease
 X₅ Average fruit length (cm) X₁₃ Number of white flies per plant
 X₆ Average fruit width (cm) X₁₄ Number of thrips per leaf
 X₇ Individual fruit weight (g) X₁₅ Number of mites per leaf
 X₈ Fruit yield per plant (g) X₁₆ Number of aphids per plant

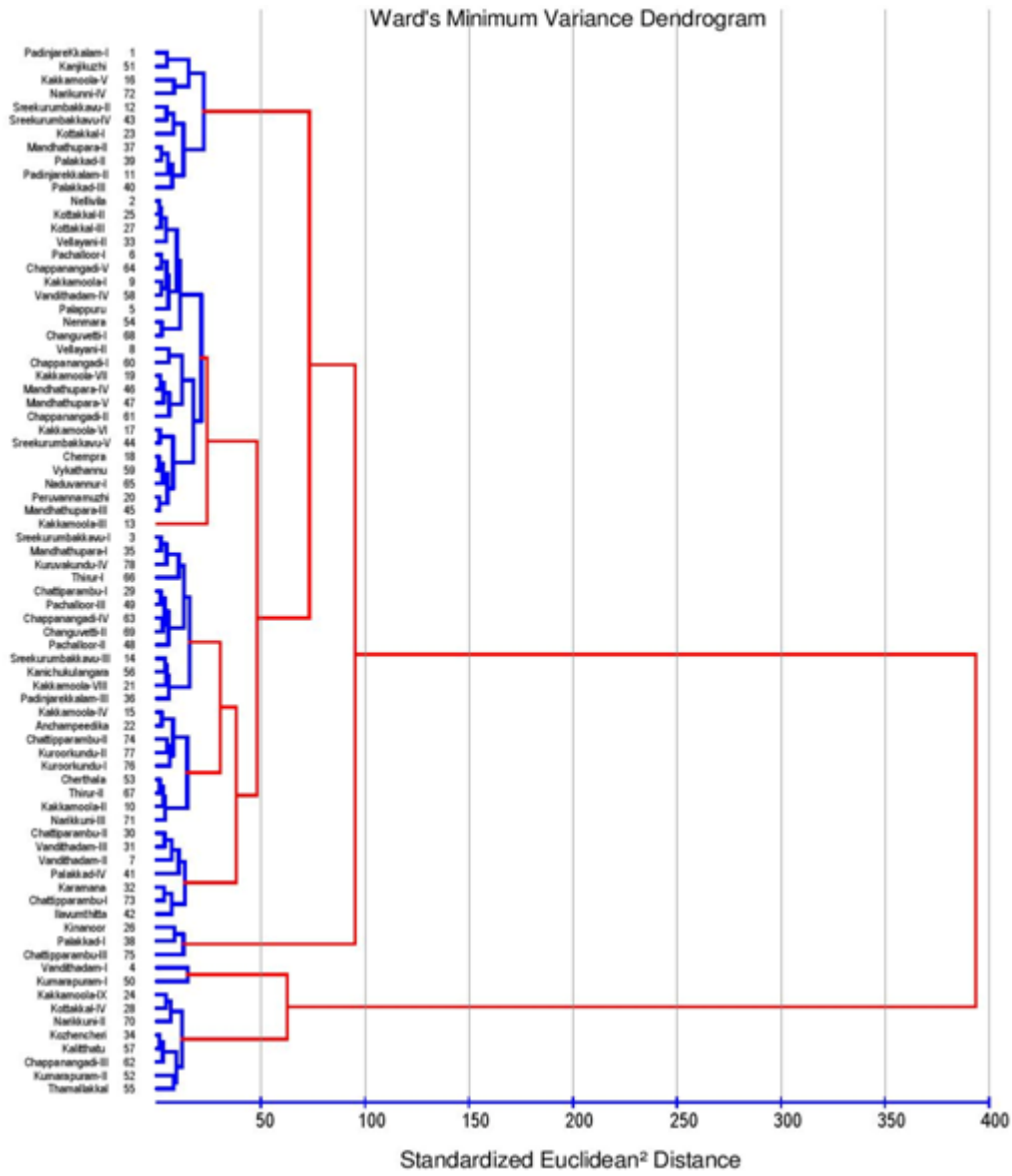


Figure 1: Dendrogram of 78 genotypes of bird chilli