

GENETIC CATALOGUING OF HOT CHILLI (*CAPSIUM CHINENSE* JACQ.) TYPES OF KERALA

Kerala is one of the centres of diversity of *Capsicum chinense* Jacq. Characterized by its typical flavour and aroma, the species is noted

for its high oleoresin content and pungency. The crop is cultivated in the homesteads of Kerala and is being exported to Maldives from

Table 1. Frequency percentage of descriptor states in hot chilli germplasm

Sl. No.	Descriptor	Descriptor state (frequency percentage)				
1	Hypocotyl colour	Green (93.75%)	Purple (6.25%)			
2	Stem pubescence	Sparse (87.50%)	Intermediate (12.50%)			
3	Leaf colour	Light green (90.63%)	Light purple (6.25%)			
4	Stem colour	Green (43.75%)	Green with purple stripes (50.00%)	Purple (6.75%)		
5	Nodal anthocyanin	Green (46.88%)	Light purple (40.63%)	Purple (6.75%)	Dark purple (6.75%)	
6	Plant growth habit	Erect (65.63%)	Compact (34.38%)			
7	Number of flowers per axil	Two (46.88%)	Three (53.13%)			
8	Flower position	Erect (40.63%)	Intermediate (43.75%)	Pendant (15.63%)		
9	Corolla colour	Light yellow (93.75%)	Purple (6.75%)			
10	Anther colour	Pale blue (28.13%)	Light purple (65.63%)	Purple (6.75%)		
11	Filament colour	White (93.75%)	Light purple (6.75%)			
12	Fruit colour at immature stage	Green (96.87%)	Deep purple (3.13%)			
13	Fruit colour at mature stage	Red (68.75%)	Dark red (25.00%)	Lemon-yellow (6.75%)		
14	Fruit shape	Elongate (18.75%)	Triangular (25.00%)	Campanulate (37.50%)	Blocky (15.62%)	Almost round (3.13%)
15	Fruit shape at pedicel attachment	Acute (25.00%)	Truncate (62.50%)	Cordate (12.50%)		
16	Neck at base of fruit	Absent (84.38%)	Present (15.62%)			
17	Fruit shape at blossom end	Pointed (59.38%)	Blunt (40.62%)			
18	Fruit cross sectional corrugation	Corrugated (84.37%)	Intermediate (12.50%)	Slightly corrugated (3.13%)		

Trivandrum airport, where it has got much demand. The high variability existing in the species has not been exploited so far. Hence a study was undertaken at the Department of Olericulture, College of Agriculture, Trivandrum to collect and characterize hot chilli (*C. chinense*) types of Kerala.

Thirty-two diverse accessions of *C. chinense*, collected from different parts of the state through survey and correspondence were evaluated in randomized block design with three replications during September 2000 to May 2001. The crop received timely management practices as per package of practices recommendations of the Kerala Agricultural University (KAU, 1996). Fifteen plants were included in each accession and planted at a spacing of 75 x 60 cm. Characterization was done on five plants selected at random from each accession as per the descriptor list of IBPGR for capsicum (IBPGR, 1995).

A wide range of variation was observed among the accessions for several morphological characters. The frequency percentage for each character was worked out as per Mohammed (1994) and presented in Table 1.

The accessions were characterized by green to purple hypocotyl and stem. Leaf colour varied between light green (90.63 per cent) to light purple (6.25 per cent) with deltoid leaf shape. Most of the accessions had sparse stem pubescence (87.50 per cent) with green (46.88 per cent), light purple (40.63 per cent), purple (6.75 per cent) or dark purple (6.75 per cent) nodal anthocyanin. Plant growth habit was either erect (65.63 per cent) or compact (34.38 per cent) with a stem length of 21.00 to 55.75 cm.

Flowers per axil were either two (46.88 per cent) or three (53.13 per cent) with erect (40.63 per cent), intermediate (43.75 per cent) or pendant (15.63 per cent) position at anthesis. Corolla colour ranged from light yellow (93.75 per cent)

to purple (6.75 per cent) with either pale blue (28.13 per cent), light purple (65.63 per cent) or purple (6.75 per cent) filament. All the accessions had rotate corolla without corolla spot. A prominent annular constriction at calyx was noticed in all the accessions. Calyx pigmentation was absent in most of the accessions, while calyx margin was mostly intermediate.

The extent of variability observed was more pronounced for fruit characters. Fruit colour at immature stage was green (96.87 per cent) or deep purple (3.13%), whereas at mature stage it showed a gradation from dark red (25.00%), red (68.75%) to lemon-yellow (6.75%) colour. Based on fruit shape, the accessions could be grouped into five distinct morphological classes namely elongate (18.75 per cent), triangular (25.00%), campanulate (37.50%), blocky (15.62%) and almost round (3.13%). At pedicel attachment, fruit shape was acute (25.00 per cent), truncate (62.50%) or cordate (12.50 per cent). Neck at base of fruit was absent (84.38 per cent) in most of the accessions with either pointed (59.38%) or blunt (40.62%) blossom end. Slightly corrugated (3.13%) to corrugated (84.37%) fruit cross-section was noticed with two or three locules per fruit. Seed was straw coloured in all the accessions. High variability for morphological characters in *C. chinense* was also reported by Pradeepkumar (1990), Cherian (2000) and Sreelathakumary (2000).

Genetic cataloguing based on standard descriptors helps to easily describe the morphological features of a genotype and thus helps exchange of information about new accessions. Thirty-two accessions of *Capsicum chinense* upon cataloguing showed distinct variations with respect to vegetative, inflorescence and fruit characters.

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