Variability in Chilli (*Capsicum*) Rom. of Central and South Kerala

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Key Words: Bacterial wilt, Characterization, Chilli, Germplasm, Kerala

Chillies (*Capsicum*) Rom. are believed to have established well in the tropics about five centuries back. India is the largest producer and consumer of chilli. Considerable variability exists in the different cultivated species across the country. With India as a signatory to the WTO it has become imperative to preserve our genetic wealth in order to safeguard our rights on them.

An exploration was conducted in the central and southern districts of Kerala namely, Palakkad, Thrissur, Ernakulam, Alappuzha, Kottayam, Kollam and Thiruvananthapuram during 1999-2000 and 52 accessions of *Capsicum annuum*, 11 of *Capsicum frutescens* and 8 *of Capsicum chinense* was collected. These germplasm were raised at Regional Agricultural Research Station, Pattambi (Kerala) for characterization on 28 qualitative characters and 11 quantitative traits. Incidence of bacterial wilt and chilli mosaic on the collected types were also evaluated.

Considerable variability exists in the germplasm. Market demand for high pungency chillies had created interest in the cultivation of *Capsicum frutescens* and *Capsicum chinense*. Variability in some important qualitative characters in the three species is given in Table 1. Stem colour was green in 80% of *C. annuum*, 75% of *C. chinense* and all the accessions of *C. frutescens*. Greenish purple colour was observed in 20% of *C. annuum* and 25% *C. chinense* accessions. Stem pubescence was sparse or intermediate in all the collected genotypes. Purple pigmentation in the nodal region was observed in 69% accessions of *C. annuum*, 78% of accession of *C. frutescens* had no pigmentation in the nodal region, while 75% accessions of *C. chinense* had light purple to dark purple pigmentation. Branching was dense in 25% of *C. annuum*, 20% of *C. frutescens* and 42% of *C. chinense*. Dense tillering was also observed in one type under each of the species. Leaf density was intermediate or dense in most of the collected types. Leaf colour varied between light green to dark green. Flowers were erect in 25% of *C. annuum*, 50% of *C. frutescens* and 14% of *C. chinense*. In *C. annuum* and *C. chinense* pendent flowers were predominant. White corolla colour was predominant in *C. annuum* and *C. chinense*, while Yellow corolla colour in *C. frutescens*. Two genotypes of *C. annuum* had white flowers, with purple margin. Two inserted stigma were observed in three accessions of *C. annuum*.

Fruit colour intermediate state was green, white or purple. In *C. chinense*, one accession had light orange coloured fruit. Mature fruit colour was predominantly red in all the collected types while one accession in *C. frutescens* and *C. chinense* had orange coloured fruit. Globular fruits were observed in accession of *C. annuum*

Table 1. Variability in some qualitative characters of chilli accessions

Character	Frequency of distribution under each category (%)		
	Capsicum annuum	*Capsicum frutescens*	*Capsicum chinense*
Stem colour			
Green	80.7	100	75.0
Greenish purple	19.3	0	25.0
Nodal anthocyanin			
None	30.6	77.8	25.0
Light purple	32.3	11.1	25.0
Dark purple	37.1	11.1	50.0
Leaf colour			
Light green	33.0	50.0	28.5
Dark green	77.0	50.0	71.4
Corolla colour			
White	82.9	16.7	71.4
Purple	4.2	0	14.3
Yellow	8.5	83.3	14.3
White with purple margin	4.2	0	0
Fruit colour			
Green	82.3	57.1	71.4
Purple	0	0	14.3
White	17.4	2.9	14.3
Fruit colour (mature stage)			
Orange	0	14.3	14.3
Light red	2.3	14.3	0
Dark red	97.6	71.4	85.6

and *C. chinense*. Triangular shaped fruits were observed in three *C. annuum* accessions, one *C. frutescens* and two *C. chinense* accessions. One accession under *C. annuum* had wrinkled fruit surface, vegetative characters, plant height and canopy width varied substantially. Variation was also observed in leaf length and leaf width. Fruit length ranged from 3.4 to 16.0 cm in *C. annuum*, 2.3 to 6 cm in *C. frutescens* and 3.9 to 10.9 in *C. chinense*. Fruit weight ranged from 0.7 to 7.4 g in *C. annuum*, 2.3 to 4.8 g in *C. frutescens* and 1.9 to 4.0 g in *C. chinense*. Seed weight also varied significantly. In *C. annuum*, 1000-seed weight ranged between 2.6 to 7.5 g whereas 3.1 to 4.2 g in *C. frutescens* and 2.1 to 3.5 g in *C. chinense*. Non-additive gene action had been reported for characters like plant height and fruit length (Rao and Chhonkar, 1983).

In Kerala, bacterial wilt and mosaic are serious problems in chilli cultivation. Susceptibility of collected accessions to bacterial wilt as well as chilli mosaic was also recorded during the evaluation. Eight accessions (four each from *C. annuum* and *C. chinense*) were free from bacterial wilt. Whereas 9 accessions of *C. annuum* were free from chilli mosaic. These genotypes may prove helpful in developing resistant varieties. Highest/plant yield was recorded in three accessions collected from Palakkad district.

Table 2. Variability in some quantitative attributes of chilli accessions

Characters	Range		
	Capsicum annuum	*Capsicum frutescens*	*Capsicum chinense*
Plant height (cm)	27.0-82.5	47.2-76.9	46-71
Canopy (cm)	24.5-77.0	37.0-78.5	44-106
Stem length (cm)	6.5-49.0	20.544.5	27.3-47.3
Stem diameter (cm)	2.0-5.1	2.2-3.9	2.4-3.7
Leaf length (cm)	7.8-17.9	9.6-22.1	11.9-17.4
Leaf width (cm)	2.4-8.3	3.2-9.1	3.3-7.5
Fruit length (cm)	3.4-16.6	2.3-6.0	3.9-10.9
Fruit width (cm)	0.4-2.4	0.7-2.2	1.1-2.4
Pedicel length (cm)	1.8-6.3	2.0-2.5	2.8-5.6
Fruit weight (g)	0.7-8.9	2.34.8	1.9-4.0
1000-seed weight (g)	2.6-7.5	3.1-4.2	2.1-3.5

References

Rao PV and Chhonkar (1983) Components of genetic variances for five quantitative characters in chilli. *South Indian Hortic.* **31:** 15-19.

Evaluation of Guava Germplasm for the Incidence of Spiralling Whitefly, *Aleurodicus dispersus* Russell

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Key Words: *Aleurodicus dispersus*, Spiralling whitefly, Guava germplasm

The spiralling whitefly, *Aleurodicus dispersus* Russell (*Homoptera: Aleyurodidae*) is an exotic pest which was reported to have entered India through Sri Lanka in mid nineties (Ranjith *et al.* 1998). Within a span of a couple of years after its first report of occurrence in Kerala, Tamil Nadu and Karnataka (Palaniswamy *et al.* 1995; Mani and Krishnamurthy, 1996), its menace on a wide range of crops including guava, has grown to an alarming level. Recently the pest caused havoc among guava growers in Andhra Pradesh. The eggs, laid in circular fashion, pupae and adults of this insect are found on the lower surface of leaves as conspicuous white cottony cushion coating. Nymphs and adults suck sap from leaves making them turn yellow resulting in stunted plant growth. Owing to its recent introduction, an effective IPM package for the whitefly is yet to be standardised. Except for recording a list of host plants across the country, studies on varietal preference are yet to be taken up. Hence, an attempt has been made to screen guava germplasm for their variable susceptibility to this alien pest. The information generated on these lines would go a longway in breeding resistant varieties.

Twenty-five guava germplasm collections (Table 1) including popular cultivars, exotic collections and a species