

SURVEY FOR PEANUT STRIPE VIRUS IN INDIA

R.D.V.J. PRASADA RAO, A.S. REDDY* ANND S.K. CHAKRAVARTY

Plant Quarantine Regional Station (N.B.P.G.R.), A.R.I. Campus, Rajendra Nagar, Hyderabad—30

Peanut stripe virus (PStV) was first detected in 1982 in USA in seed received from China (Demski *et al.* 1984). In subsequent surveys PStV was found in Thailand, Indonesia and Philippines. P St V has been shown to exist for the last 10 years in all these countries and it was mistaken for Peanut mottle virus (Dr. D.V.R. Reddy, Personal communication). PStV has not been reported from India. During the last 10 years several seeds of groundnut germplasm were introduced from various countries by different organisations. However, not all the seed supplied to these organizations was cleared through rigorous quarantine procedures. Under these circumstances, it is likely that PStV, a seed-transmitted virus may enter into India. In collaboration with ICRISAT a survey was undertaken for PStV in groundnut germplasm grown at different research stations during the 1987 rainy season.

Symptoms typical of Peanut stripe were observed in some of the groundnut entries in the initial evaluation trial for spanish bunch (IET-SB) conducted by All India Coordinated Research Project on oilseeds (AICORPO). The disease was initially observed on 8 entries (NRGS(E)-2, NRGS(FDRS)-1, NRGS(FDRS)-2, NRGS (FDRS)-3, J-19, J-21 and J-22), out of 49 entries included in the IET-SB trial(table-1) grown at the Regional Research Station, Raichur. Subsequent surveys in 11 of the 35 centers (Table-2) where the IET-SB trial was grown confirmed PStV presence in another 5 centers on one or more of entries of IET-SB mentioned above (table

3). Groundnut in other 6 locations could not be adequately surveyed because of severe drought and damage due to leaf miner, *Aproaerema modicella*.

PStV was identified based on typical symptoms of striping along the lateral veins of the young leaves (Fig. 1); green islands or oakleaf pattern on older leaves, by conducting ELISA test using PStV antiserum (provided by Dr. J.W. Demski, Georgia Expt. Station, USA) on suspected leaf samples, and by mechanical inoculation on *Chenopodium amaranticolor*, on which it produces chlorotic lesions. In all the 6 centers where PStV was suspected, the presence of the virus was confined to only in the entries supplied by NRGC or GAU, Junagadh. During our surveys PStV was also observed in other genotypes in Junagadh and Navsari indicating that PStV may have introduced through seed into Junagadh.

Efforts are underway to locate the original source of infested seed and from which country they were imported.

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* Groundnut Pathology, Legume Program, ICRISAT, Patancheru, A.P. 502 324.

TABLE 1. Groundnut entries included in initial evaluation trial (IET) for spanish bunch, Kharif, 1987.

Sl. No.	Entry	Name and address of sponsoring breeder.
1.	ICGV 86127, 86309, 86236, 96315, 86590, 86600, 86635, 86598, 863031, 86029, ICGS-11, ICG(FDRS)-4 & ICG(FDRS)-34.	Principal groundnut breeder, ICRISAT, Patancheru, Hyderabad.
2.	NRGS(E)-2, (E)-6, (FDRS)-1, (FDRS)-2, (FDRS)-5 & (FDRS)-6.	Director, NRCG, Janagadh.
3.	J-19, J-21, J-22, J-24,	Research Scientist, GAU, Junagadh.
4.	DH-23, DH-26, DH-30, DH-31.	Dr. A.F. Habbib, RRS, Dharswad.
5.	TG-22 & RG-23.	Dr. S.H. Patel, BARC., Bombay.
6.	PGN-3 & PGN-5.	Dr. M.V.R. Prasad, IARI Reg. Stn., Hyderabad.
7.	TVG-4 & TVG-5.	Prof. & Head, Oilseeds Res. Stn., Tindivanam, T.N.
8.	MH-7, MH-8	Dr. T.P. Yadav, HAU, Hisar.
9.	SPS-38, SPS-55	Dr. S. S, Chatterjee, Pulses and Oilseeds Res. Stn., Berhampore, (W.B.).
10.	AKU-3.	Dr. S.N. Deshmukh, Resechn Date., P K V Akola, Maharashtra.
11.	TVG-2	Prof. & Head, Oilseeds Research Station, Tindivanam, Tamilnadu.
12.	RSHY-12	Dr. T. Pankaj Reddy, IARI, Reg. Stn., Hyderabad.
13.	RG-192	Dr. D.K. Saxena, RRS, Durgapur, Rajasthan.
14.	JL-24 M-1	Dr. Chandra Mauli, BARC, Bombay.
15.	VG-78	Professor of Oilseeds, RRS, Vridachalam, T..M.
16.	JL-24 (National Check)	
17.	Zonal Check	
18.	Local Check	
19.	Minikit Check.	

TABLE 2. List of the centres where IET-SB trial was conducted during Kharif, 1987.

ZONE	CENTERS
I	Durgapur, Hissar, Kanke, Mainpuri, Jhansi Chainki, Sabour, Ludhiana
II	GAU-Navsari*, NRCG-Junagadh*, Amreli, Talod.
III	Akola, Khargaon, Jalagoan, Raipur, Badnapur.
IV	Chiplima, Berhampore, Yellamanchalli, Bhubneswar.
V	Chintamani, *Dharwad, ICRISAT-Hyderabad*, Jagtial, Kadiri*, Raichur* Tirupati*, Palem* Anantapur, Vikarabad*.
VI	Aliyaranagar*, Tindivanam*, Vridachalam*, Vellayani

* Centers surveyed for Peanut stripe virus.

TABLE 3. Groundnut entries of IET(SB) in which Peanut Stripe virus was observed at various centers

ENTRIES	CENTERS					
	Raichur	ICRISAT Hyderabad	palem	Vikarabad	NRCG Janagadh	Navsari
1. NRGS(E)-2	+	+	+			
2. NRGS(E)-6	+	+				
3. NRGS(FDRS)-1	+					
4. NRGS(FDRS)-2	+					
5. NRGS(FDRS)-3	+	+				
6. NRGS(FDRS)-5						
7. NRGS(FDRS)-6		+				
8. J-19	+		+			
9. J-21	+	+	+	+		
10. J-22	+	+				
11. J-24		+				+
12. Other entries of IET(SB) trial	1 +					
13. Other trials					2 +	3 +

1 One Plant of PGN-3 adjacent to PStV infected Plant of NRGS(E)-2 with secondary infection.

2 One Plant in segregating material

3 Two Plants in a varietal trial

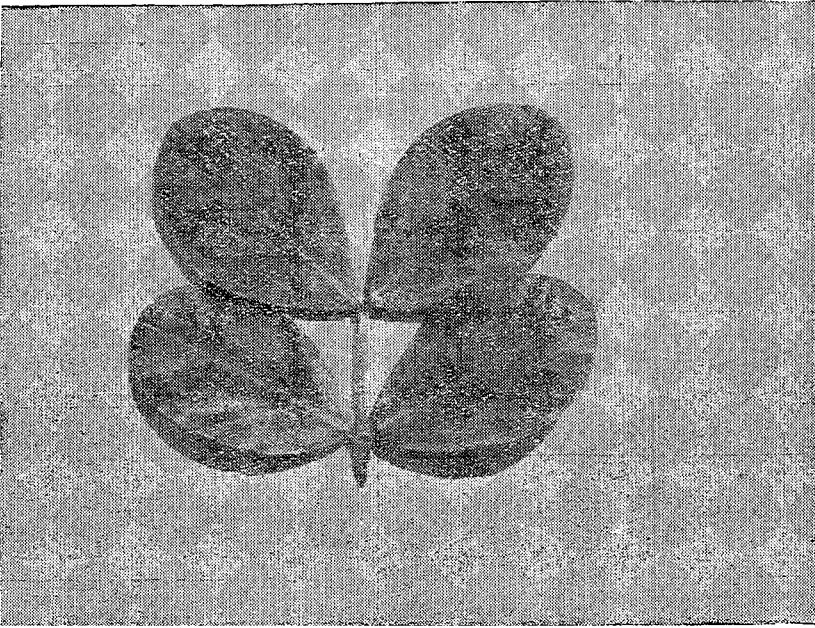


Fig 1: Leaves of Groundnut *CV.* TMV-2 infected with peanut stripe virus showing stripe symptoms

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REFERENCES

Demski, J.W., Reddy, D.V.R., Sowell, Jr. G., and

D. Bays, 1984. Peanut stripe virus - a new seed borne potyvirus from China infecting groundnut (*Arachis hypogaea*) *Ann. Appl. Biol.*, 105:495-501.

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