

Interception of Peanut Stripe Virus in Soybean Seeds Imported from China

R.D.V.J. Prasada Rao, S.K. Chakrabarty and A.S. Reddy*

National Bureau of Plant Genetic Resources, Regional Station, Rajendranagar, Hyderabad 500 030.

*ICRISAT, Patancheru, Andhra Pradesh 502 324.

Peanut Stripe Virus (PStV) is one of the most widely distributed viruses of groundnut in South East Asia (Demski *et al.* 1993). PStV is seed transmitted upto 37% in groundnut that are artificially infected (Demski and Lovell, 1985). PStV infects naturally soybean (*Glycine max*) in which also it is seed borne. Vetten *et al.*, (1992) isolated 3 strains (PN, 74 and PM) of PStV from soybean which are seed transmitted.

During 1994 two germplasm accessions of soybean were received from the Peoples Republic of China for quarantine processing. In growout test, one plant showed severe mosaic mottling with slight stunting. In Direct Antigen Coating Enzyme Linked Immunosorbent Assay (DAC-ELISA), the virus reacted with the antisera of peanut stripe (PStV) and soybean mosaic viruses (SMV) but not with the antiserum of peanut mottle virus (PMV). The virus produced chlorotic local lesions on *Chenopodium amaranticolor*, systemic symptoms on *Glycine max* cv. Bragg, *Vigna unguiculata* cv. C-152, *Arachis hypogaea* cv. TMV-2 and JL-24. The virus did not infect *Phaseolus vulgaris* cv. Top Crop. The virus isolated on soybean fulfilled majority of the criteria proposed by Demski *et al.*, (1988) for peanut stripe virus (serological relationships with peanut stripe virus (PStV), black eye cowpea mosaic virus (BICMV) and soybean mosaic virus (SMV) but not with peanut mottle virus (PMV); local lesions in *C. amaranticolor* and no symptoms on *P. vulgaris* cv. Top Crop). The virus infected groundnut cultivars TMV-2 and JL-24 although the transmission in these cultivars was not tested. PStV which is serologically related to BICMV and SMV differed from them by infecting groundnut (Demski *et al.*, 1984). The virus

isolated on soybean imported from china therefore identified as PStV.

PStV is currently known to be restricted to Gujarat state and is considered to be of quarantine importance. The present study suggests that not only the seed of groundnut but also seed of all potential hosts of PStV should be tested for PStV presence in quarantine.

Acknowledgments

The authors are grateful to Dr. K P S Chandel, Director, and Dr. K S Varapradad, Officer-in-Charge of NEPGR and Dr. D V R Reddy, ICRISAT for their encouragement and facilities provided for this work.

References

- Demski, J.W., and Lovell, G.R. 1985. Peanut stripe virus and the distribution of peanut seed. *Plant Disease* 69:734-738.
- Demski, J.W., Reddy D V R., Sowell, G., and Bays, D., 1984. Peanut stripe virus - a new seed - borne potyvirus from China infecting groundnut (*Arachis hypogaea*). *Annals of Applied Biology* 105: 495-501.
- Demski, J W., Reddy, D V R., Wangkaew, S., Iwaki M., Salen, N., and Xu, Z., 1988. Naming of peanut stripe virus *Phytopathology* 78: 631-632.
- Demski, J.W., Reddy, D V R., Wangkaew, S., Xu, Z., Kuhn, W., Cassidy, B.G. Shukla, D.D., Saleh, N., Middleleton, J., Sreenivasulu, P., Prasada Rao, R D V J., Senboku, T., Dollet, M., and Mc Donald, D. 1993. Peanut Stripe Virus. *Information Bulletin* No. 38, Patancheru, A P 502 324, India. International Research Institute for the Semi-Arid Tropics, and Griffin, GA 30223, USA; Peanut Collaborative Research Support Program 20 pp.
- Vetten, H J., Green, S K., and Lesemann, D E. 1992. Characterisation of Peanut Stripe Virus Isolates from Soybean in Taiwan. *Journal of phytopathology* 135: 107-124.

Received : 7-2-1997