

Box No: 16

New Information on the Thrips Vectors of Tomato Spotted Wilt Virus in Groundnut Crops in India

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Reddy and Wightman (1988) published a comprehensive review of the vector thrips and transmission of tomato spotted wilt virus (TSWV) which is the causal agent of bud necrosis disease (BND) in groundnut crops. The documentation quoted in the review pointed to *Frankliniella schultzei* Trybani, as the main vector of TSWV isolates from groundnut in India. Since then it has been discovered that the situation may be more complex than originally perceived. This came about following the discovery by R.J. Beshear (University of Georgia) that specimens from ICRISAT Center labeled as *F. schultzei* were in fact *Thrips palmi* Karny. This discovery was considered to be significant because *T. palmi* had recently been identified as one of the vectors of TSWV in Japan (Kameya-Iwaki et al. 1988).

The obvious need to clarify the situation led to an examination of the thrips in the ICRISAT slide collection and on local crops. The former consisted of *Scirtothrips dorsalis* Hood, *S. oligochaetus* (Hood), *F. schultzei* (pale form sometimes called 'sulphurea'), and *T. palmi*. The record afforded

from this collection indicated that all species were present on the ICRISAT farm since 1980.

Visits to groundnut fields near Hyderabad, Andhra Pradesh, and Raichur, Karnataka, in February 1989 revealed that *S. dorsalis* and *S. oligochaetus* were in the leaf terminals, on old leaflets and in the flowers, although the larvae were concentrated between the folded terminal leaflets. *F. schultzei* was present in the flowers and *T. palmi* in the terminal leaf buds. *S. dorsalis* was the most abundant and consistently present. *S. oligochaetus* was comparatively rare, and *F. schultzei* and *T. palmi* were irregular in distribution.

These collections provided fresh specimens of these species, as well as of the easily recognized flower thrips *Megalurothrips usitatus* (Bagnall), to test individual insects for the presence of TSWV by dot immunobinding assay. There was a positive result for *T. palmi* although we need further confirmation. Viral antigens could not be detected in *M. usitatus* and *S. oligochaetus*. The results with *S. dorsalis* and *F. schultzei* were inconclusive because of nonspecific reaction. This information is communicated through this newsletter to indicate to our colleagues that there is a need to reexamine the vector relationships of BND in Asia.

References

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- Reddy, D.V.R., and Wightman, J.A. 1988. Tomato spotted wilt virus: thrips transmission and control. *Advances in Disease Vector Research* 5: 203-220.