

# First Report of *Tomato Spotted Wilt Virus* on Tobacco, Eggplant and Some Weeds in Syria

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**ABSTRACT:** During spring and summer of 2013, a survey was carried out to investigate the presence of *Tomato spotted wilt virus* (TSWV, genus *Tospovirus*, family Bunyaviridae) in 389 tobacco samples, 72 eggplant samples, and weed samples (35 *Sonchus oleraceus*, 33 *Xanthium strumarium*, 130 *Amaranthus retroflexus*, 36 *Portulaca oleracea*) from grower fields, representing Latakia province. Samples were tested by Tissue Blot Immunobinding Assay TBIA using a commercial kit (Plantprint, Spain). Results of TBIA of tested samples showed the natural infection of TSWV in Latakia by 31,94% on eggplant, 7,97% on tobacco, 68,57% on *S.oleraceus*, 87,88% on *X.strumarium*, 78,46% on *A.retroflexus*, 13,89% on *P.oleracea*. The first record of TSWV in Syria were reported on Tomato (Ismaeil *et al.*, 2012). To our knowledge, this is the first record of TSWV on tobacco, eggplant and weeds in Syria.

**Full text:** *Tomato spotted wilt virus* (TSWV) was first reported in 1915 in Victoria, in south-eastern Australia, by Brittlebank (1919), who named the disease caused by this pathogen "Spotted Wilt". TSWV has since been reported in more than 1100 plant species (Parella *et al.*, 2003; Peters, 2004). TSWV is one of the most economically important members of the genus *Tospovirus* (family Bunyaviridae) (Moyer, 2000; Mumford *et al.*, 1996). TSWV is transmitted by multiple species of thrips (Ullman *et al.*, 1997).

Major crop losses due to TSWV have occurred in Mexico, with 90 percent losses recorded in *Chrysanthemum* (Ochoa *et al.*, 1999), and in Georgia, USA, with 100 percent losses recorded in capsicum and tomato (Gitaitis *et al.*, 1998).

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## References:

- F. Ismaeil, A. Haj Kassem and S. Al-Chaabli., 2012. First report of Tomato spotted wilt virus on tomato in Syria. *Journal of Plant Pathology*, 94 (4, Supplement), S4.85-S4.105.
- Gitaitis, R. D., Dowler, C. C. and Chalfant, R. B. 1998. Epidemiology of tomato spotted wilt in pepper and tomato in southern Georgia. *Plant Disease* 82: 752-756.
- Moyer, J.W. 2000. *Tospoviruses* (Bunyaviridae), pp 1803-1807. In A. Granoff and R.G. Webster (eds.), *Encyclopedia of Virology*. Academic Press.
- Mumford, R.A., I. Barker and K.R. Wood, 1996. An improved method for the detection of *Tospoviruses* using the polymerase chain reaction. *J. Virol. Meth.* 57:109-115.
- Ochoa, M. D. L., Zavaleta-Mejía, Mora-Aguilera, G. and Johansen, N. R. M. 1999. implications of weed composition and thrips species for the epidemiology of Tomato spotted wilt virus in *Chrysanthemum* (*Dendranthema grandiflora*). *Plant Pathology* 48: 707-717.

- Parrella G, Gognalons P, Gebre-Selassie K, Vovlas C, Marcoux G. 2003. An update of the host range of Tomato spotted wilt virus. *J Plant Pathol* 85:227-264.
- Peters D. 2004, Tospoviruses: a threat to the intensive agriculture in the tropics. In: Loebeinstein G, Thottapilly G (eds), *Virus and Viruslike Diseases of Major Crops in Developing Countries*. Dordrecht, Netherlands, Kluwer Academic Publisher, pp. 719–742.
- Ullman, D. E., Sherwood, J. L., and German, T. L. 1997. Thrips as vectors of plant pathogens. In: Lewis, T, ed. *Thrips as Crop Pests*. CAB International, New York, pp. 539-565.