First report of *Tomato yellow leaf curl China virus* with DNA β infecting *Datura stramonium* in China

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Abstract. *Tomato yellow leaf curl China virus*, associated with a satellite DNA β , has been detected in *Datura stramonium* (jimsonweed) with leaf curl disease for the first time in China.

A virus isolate (YN72) was collected from *Datura stramonium* (jimsonweed) showing chlorotic and leaf curl symptoms (Fig. 1) from Binchuan in the Yunnan province of China in July 2005. The isolate gave a positive reaction with antiserum to *African cassava mosaic virus* using DAS-ELISA (AGDIA, Elkhart, IN). Total DNA was extracted and tested for the presence of geminiviral DNA using polymerase chain reaction (PCR) with the begomovirus-specific degenerate primer pair PA/PB (Deng *et al.* 1994). PCR products of the expected size (~500 bp) were obtained, cloned into pGEM-T Easy (Promega, Madison, WI), and sequenced (GenBank Accession EF011561). Nucleotide sequence comparison showed 99% identity with *Malvastrum yellow vein Yunnan virus* (isolate Y160) (GenBank Accession AJ971500). The remaining DNA-A sequence of YN72 was amplified by PCR using the primers of Dong *et al.* (2007). The complete DNA-A sequence of YN72 was determined to be 2739 nucleotides (GenBank Accession EF011559). Comparisons with viral sequences available at the GenBank-EMBL databases using BLASTN showed that DNA-A of YN72 is closely related to *Tomato yellow leaf curl China virus*-(Y43) with 96.7% nucleotide sequence identity.

Fig. 1. Typical symptoms of *Datura stramonium* infected with *Tomato yellow leaf curl China virus* (TYLCCNV) isolate jimsonweed-BC in China.

To test whether a satellite molecule was associated with this isolate, a universal primer pair specific for DNA β was used to amplify the putative DNA (Briddon *et al.* 2002). Using this primer set, an amplification product of ~1300 bp was obtained. Sequence analysis revealed that this DNA β of YN72 was 1335 nucleotides long (GenBank Accession EF011560) and most closely related to the DNA β associated with *Tomato yellow leaf curl China virus*-(Y254) (GenBank Accession AJ971332; 98% nucleotide sequence identity).

To our knowledge, this is the first report of a begomovirus, which has DNA A along with a satellite DNA β , being associated with leaf curl disease on *Datura stramonium* in China.

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