



First report of natural infection of watermelon by *Watermelon silver mottle virus* in China

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Watermelon (*Citrullus lanatus*) is one of the most important crops in China. *Watermelon silver mottle virus* (WSMoV) is a tospovirus that caused severe losses in watermelon production in Taiwan (Yeh *et al.*, 1992) and Japan (Okuda *et al.*, 2002). It is transmitted by *Thrips palmi* Karny (Chen *et al.*, 1990) that is present in China, but WSMoV has not been reported so far in China. During the summer of 2009 and the autumn of 2010, severely stunted plants were observed in greenhouses in the suburb of Zengcheng city, Guangdong province, China, with shortened internodes, and associated with yield losses. Watermelon plants in greenhouses showed leaf crinkling and silver mottle symptoms at 10 to 30 percent incidence (Fig. 1), similar to symptoms caused by WSMoV (Iwaki *et al.*, 1984; Yeh *et al.*, 1992). Sixty symptom-bearing watermelon leaf samples were collected from greenhouses in the suburb of Zengcheng city during 2009 and 2010. Extracts of 43 leaf samples reacted positively with an antiserum specific to WSMoV (Accubio Technology Co., Ltd, Beijing, China) by double-antibody sandwich (DAS)-ELISA. To further characterize this virus, all ELISA-positive samples were analysed by reverse transcription-polymerase chain reaction (RT-PCR), using the primer pair wsmov-1 (5'-GCTGTTCCAGGGTACTTTTC-3') and 5'-GGACTCCACTCCCGGATTTA-3'), designed from the conserved region of the partial nucleocapsid (N) gene in S RNA of WSMoV. A single 608 bp band corresponding to the partial N gene sequence was obtained from ELISA-positive samples but not from healthy controls. The RT-PCR product was cloned in pGEM-T Vector (TaKaRa Biotechnology Co. Ltd, Dalian, China) and sequenced. A 494-nt long, partial N gene sequence was deposited in the GenBank database under Accession No. HM989015. Sequence comparisons showed 93 percent identity at nucleotide level (GenBank Accession Nos. AB042649, AY514625, and AY864852) and 98 percent identity at amino acid level (GenBank Accession Nos. NP620771, CAJ34672, and BAB20588) to the nucleocapsid protein gene of Japanese, Taiwanese, and Thai isolates of

WSMoV. These results indicate that the virus identified in symptomatic watermelon plants in the suburb of Zengcheng city is an isolate of WSMoV. To our knowledge, this is the first report of natural infection of watermelon by WSMoV in China.

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Figure 1

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