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Disease Notes

The First Report of *Tomato spotted wilt virus* on *Gerbera* and *Chrysanthemum* in Venezuela

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e-Xtra

Gerbera (*Gerbera jamesonii*) and *Chrysanthemum* (family Asteraceae) are two of the top 10 cut flowers of the world, with great commercial value. Since 1998, Venezuela began a floral industry to produce and export fresh cut gerbera and chrysanthemum, with 40% of nurseries concentrated in Altos Mirandinos (Miranda State, north central region of the country). For the past 2 years, greenhouse-grown gerbera and chrysanthemum have been observed displaying symptoms resembling those associated with tospoviruses.

Symptomatic plants showed concentric rings, irregular chlorotic blotches, and deformation on leaves. Disease incidence was estimated at 30%. Mechanical inoculation with extracts of symptomatic leaves reproduced the typical concentric ring symptoms on indicator plants *Arachis hypogaea* L. cv. San Martín, *Capsicum chinense*, and *G. jamesonii* 6 to 15 days after inoculation. In initial tests, leaves from each 30 symptomatic gerbera and chrysanthemum species from several greenhouse facilities in Altos Mirandinos reacted positively when tested by DAS-ELISA with polyclonal antisera (ATCC, Rockville, MD) raised against *Tomato spotted wilt virus* (TSWV). Total RNA was extracted with the RNeasy Plant Mini kit (QIAGEN, Hilden, Germany) from two gerbera and two chrysanthemum ELISA-positive samples. The TSWV coat protein gene was amplified by conventional reverse transcription (RT)-PCR using primers CP1 TSWV (TTAACTTACAGCTGCTTT) and CP2 TSWV (CAAAGCATATAAGAACTT) (1). A single DNA product of ~823 bp was amplified from all samples. RT-PCR products were directly sequenced in both orientations and sequences were deposited in GenBank (Accession Nos. KF146700 and KF146701 derived from chrysanthemum, KF146702 and KF146703 derived from gerbera). The resulting sequences

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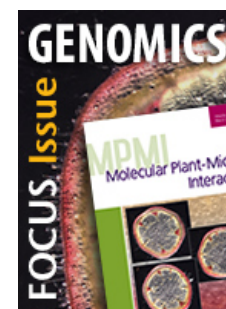
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showed over 99% identity with each other. and were found to be closely related (over 99%) with TSWV isolates deposited in GenBank originating from different hosts from France (FR693058, FR693055), Montenegro (GU339506, GU339508, GU355940), Italy (HQ830187), New Zealand (KC494501), South Korea (KC261967), and the United States (AY744476). To our knowledge, this is the first confirmed report of TSWV infecting gerbera and chrysanthemum in Venezuela. The relatively widespread occurrence of TSWV in Miranda State underscores the need for systematic surveys to assess its incidence and impact on ornamental crops so that appropriate management tactics can be developed. *Reference:* (1) R. A. Mumford et al. J. Virol. Methods 57:109, 1996.

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