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DISEASE NOTES

First Report of Necrotic Streaking of Asiatic Lilies Caused by *Plantago asiatica mosaic virus* in Chile

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Citation

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ABSTRACT

Plantago asiatica mosaic virus (PlAMV) was first detected in Chile by the Servicio Agrícola y Ganadero de Chile (SAG) associated with symptomless *Lilium* plants in 2013. In Quillota, Chile, a survey was done during spring of 2015 on greenhouse Asiatic hybrid lilies being grown for cut flowers. Symptomatic plants of cvs. Amsterdam, Indian Summerset, Litouwen, and Serengeti were found. Symptoms consisted of brown necrotic streaking associated with irregular leaf chlorosis, and severely infected plants also showed brown streaks in the stem and irregular necrosis in tepal tips. Only in cv. Litouwen it was observed that microbulbs replaced flower buds. From symptomatic plants, RNA was extracted using RNeasy Plant Mini Kit (QIAGEN) and RT-PCR was performed employing primers potex 1 (Gibbs et al. 1998) and potex 3 (van der Vlugt and Berendsen 2002) of gene RdRp. Specific bands for potexvirus were observed (Pájtli et al. 2015). Bands of 400 bp were obtained from all symptomatic plants. PCR products of cvs. Indian Summerset and Amsterdam were sent to Macrogen (Korea) for purification and sequencing. Both sequences obtained revealed 99% nucleotide identity with the consensus sequences of PlAMV from Hungary (LN714022, LN714023). After a positive result for PlAMV, a pathogenicity test was performed on cvs. Indian Summerset and Litouwen, which had previously tested negative for potexvirus. Each PlAMV isolate was prepared in PBS buffer and inoculated onto three replicate 1-month-old plants (15 to 20 cm in height) that had been previously rubbed with carborundum. Three other plants were treated with PBS only as negative controls. Plants were grown in a greenhouse (23 ± 5°C). Forty-five days after inoculation, plants from cv. Indian Summerset showed a shorter stem, necrotic streaks in some leaves associated with chlorosis in irregular patterns, a long brown necrotic streak in the stem, and necrosis in the tepal tips previous to anthesis. Plants of cv. Litouwen showed symptoms of decreased growth, brown necrotic streaks in the leaves associated with chlorosis, and microbulbs instead of flower buds. RNA was extracted from plants as previously described and tested by RT-PCR with a primer for potexvirus (Pájtli et al. 2015) and then confirmed by a second RT-PCR with a primer set specific for PlAMV (Parrella et al. 2015). All symptomatic plants tested positive with both sets of primers and the control plants all tested negative. The two inoculated PlAMV isolates sequences were deposited in GenBank (Accession Nos. KU522243 and KU522244). To our knowledge, this is the first report of Koch's postulates for PlAMV on *Lilium* plants worldwide, and the first report of the disease called necrotic streaking of lily caused by PlAMV in Chile affecting Asiatic cultivars. *Lilium* bulb export is the main ornamental industry in Chile, and this disease could be a

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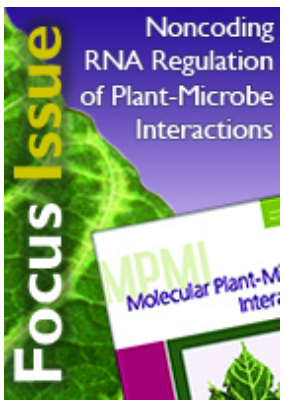

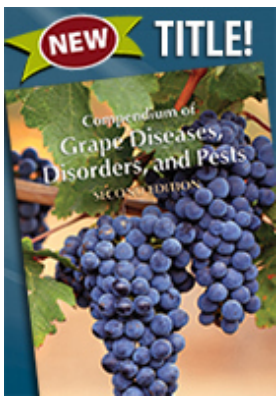

risk for this industry.

References:

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Gibbs, A., et al. 1998. J. Virol. Methods 74:67. 10.1016/S0166-0934(98)00070-6 [CrossRef] [ISI]

Pájtli, E., et al. 2015. Plant Dis. 99:1288. 10.1094/PDIS-01-15-0107-PDN [Abstract] [ISI]

Parrella, B., et al. 2015. Plant Dis. 99:1289. 10.1094/PDIS-03-15-0281-PDN [Abstract] [ISI]

van der Vlugt, R. A. A., and **Berendsen, M.** 2002. Eur. J. Pathol. 108:367. 10.1023/A:1015644409484 [CrossRef] [ISI]

Citation