plant disease

Editor-in-Chief: Anthony P. Keinath
Published by The American Phytopathological Society

August 2009, Volume 93, Number 8
Page 842
DOI: 10.1094/PDIS-93-8-0842C

Disease Notes

First Report of *Pectobacterium carotovorum* subsp. *carotovorum* on *Spathiphyllum wallisii* in Argentina

A. M. Alippi and **A. C. López**, CIDEFI (CIC – CONICET), Facultad de Ciencias Agrarias y Forestales, UNLP, cc 31, 1900 La Plata, Argentina

Peace lily (*Spathiphyllum wallisii* Regel) is a popular ornamental potted plant in Argentina. During May of 2008 (austral autumn), necrotic lesions of unknown etiology were observed on *S. wallisii* in a nursery in Pontevedra (34°45′6″S, 58°42′42″W). Plants first showed water-soaked areas starting from the leaf tips. Infected tissue became irregular, brown, dark-to-black lesions on leaves ~12 to 14 mm in diameter surrounded by yellowish haloes. Disease incidence approached 30%. Abundant bacterial streaming was observed from lesions when examined at ×100. Bacteria isolated from lesions formed white-to-cream, glistening, convex colonies on yeast dextrose calcium carbonate agar. Three bacterial strains isolated from different symptomatic plants were selected for comparative analysis with *Pectobacterium carotovorum* subsp. *carotovorum* type strain ATCC 15713. All were facultatively, anaerobic, gram-negative rods, pectolytic on crystal violet pectate agar, nonfluorescent on King's medium B, and elicited a hypersensitive response in tobacco plants. All strains were oxidase and arginine dihydrolase negative, fermented glucose, did not hydrolyze starch, did not produce lecithinase, indole or the blue pigment indigoidine, reduced nitrates, hydrolyzed gelatin and esculin, able to rot onion slices, caused soft rot of potato tubers, resistant to erythromycin, and grew at 37°C. Acid was produced from cellobiose, D-glucose, D-melibiose, D-mannitol, D-mannose, L-rhamnose, D-sucrose, and L-arabinose but not from inositol and D-sorbitol. Bacteria utilized *N*-acetyl-glucosamine and citrate but not tartrate, benzoate, or propionate. Their identity was confirmed by 16S rRNA gene sequencing of strain F402Pcc (GenBank Accession No. FJ717337) showing a 99% homology with that of strain ATCC 3326 (FJ 5958691). Pathogenicity was verified on *S. wallisii, Dieffenbachia picta, Aglaonema commutatum*, and *Anthurium andraeanum* within the Araceae family by spraying two plants per strain tested with bacterial suspensions (10^8 CFU/ml) in sterile distilled water with and without wounding the leaves with sterile needles. Controls were sprayed with sterile distilled water. After 48 h in a humidity chamber, inoculated plants and controls were maintained at 25 ± 3°C in a greenhouse. Water-soaked areas developed from 24 to 48 h after inoculation and became necrotic within 4 to 5 days. Lesions expanded to resemble natural infection in *S. wallisii* within 20 days, while in the rest of the hosts tested, lesions were smaller and remained brown surrounded by yellowish haloes. All strains were reisolated from each host tested. The original and all reisolated strains were compared by enterobacterial repetitive intergeneric consensus-PCR (4) confirming that DNA fingerprints of the reisolated strains were identical to those of the original strains. No lesions were observed on controls. The pathogen was identified as *P. carotovorum* subsp. *carotovorum* based on biochemical, physiological, pathogenicity tests, and 16S rRNA sequencing (1–3).To our knowledge, this is the first report of this pathogen on *S. wallisii* in Argentina although it has been reported as causing tomato pith necrosis (1) and soft rot of vegetables after harvest (3).

References: (1) A. M. Alippi et al. Plant Dis. 81:230, 1997. (2) L. Gardan et al. Int. J. Syst. Evol. Microbiol. 53:381, 2003. (3) L. Halperin and L. S. Spaini. Rev. Argent. Agron. 6:261, 1939. (4) F. J. Louws et al. Appl. Environ. Microbiol. 60:2286, 1994.