DISEASE NOTE

BACTERIAL SOFT ROT OF CYMBIDIUM GRANDIFLORUM CAUSED BY PECTOBACTERIUM CAROTOVORUM subsp. CAROTOVORUM IN CHINA

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Cymbidium grandiflorum cv. Vanguard with symptoms of soft rot was observed in spring 2013 in Hangzhou, China. Rotting was initially confined to several small water-soaked lesions, which enlarged rapidly in diameter. The affected areas became soft and mushy while its surface turned discolored and somewhat depressed. The severely infected plants gave off repulsive odor and died. Five bacterial strains coded CH-1 to CH-5 (CEC2013-2) isolated from the infected plants showed characteristics similar to those of the standard reference strains of Pectobacterium carotovorum subsp. carotovorum LMG 2404 and P. carotovorum subsp. carotovorum SD-6 in phenotypic tests, including results of Biolog (version 5.2), pathogenicity tests, and FAME, using the Microbial Identification System with aerobic bacterial library (TSBA 6.0). Bacterial isolates were facultative aerobic, rod-shaped, gram-negative, peritrichous flagella, and did not produce green-fluorescent diffusible pigment in King’s Medium B. Colonies on nutrient agar were grey white, slightly raised with smooth margins. Hypersensitive reaction was observed in tobacco. All isolates were identified as P. carotovorum subsp. carotovorum with Biolog similarity of 0.651-0.756 and FAMEs similarity of 0.538-0.703. Crystal violet pectate (CVP) medium test of the strains showed characteristic of P. carotovorum. Identification was confirmed by the specific PCR primers of P. carotovorum subsp. carotovorum pmr A F0145 and E2477 (Mohamed et al., 2014). Inoculation of healthy C. grandiflorum cv. Vanguard plants reproduced the symptoms observed in natural infections, which differ from the bacterial stem rot of poinsettia induced by Pectobacterium chrysanthemi (Mohamed et al., 2014). The bacterium was re-isolated from symptomatic plants of C. grandiflorum. To the best of our knowledge this is the first report of soft rot of C. grandiflorum caused by this bacterium in China.


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DISEASE NOTE

FIRST REPORT OF TOBACCO VEIN BANDING MOSAIC VIRUS IN POTATO IN CHINA

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Tobacco vein banding mosaic virus (TVBMV) is a distinct potyvirus infecting solanaceous plants with increasing importance for tobacco and other crops in mainland China (Zhang et al., 2011). During an investigation on the host range of TVBMV, we collected 180 potato (Solanum tuberosum) samples showing mild vein banding and mosaic symptoms from Shandong Province. Six samples collected in Linyi reacted positively in PTA-ELISA and Western blot assay with antiserum against TVBMV coat protein. Total RNA was extracted from leaves of a potato sample designated as FX using the RNeasy Plant Mini Kit (Qiagen, Hilden, Germany) and reverse transcribed with M-MLV using primer complementary to the 3’-end of TVBMV coat protein ORF (5’-CTACACGCACTCACCACCAAG-3’). The CP ORF of the TVBMV isolate FX was amplified in PCR with the reverse primer mentioned above and the forward primer identical to the 5’-terminal sequence of TVBMV CP ORF (5’-AATGACGAACAGACAGTTGATGCTG-3’). The PCR fragment was cloned into pGEM-T vector and sequenced. The Blast results indicated that the 816 nt-long CP ORF of the isolate FX (GenBank accession No. DQ917752) showed 99.88% identity with that of TVBMV isolate YND (EF219408) from Yunnan province (Yu et al., 2007). To the best of our knowledge, this is the first report of TVBMV on potato in China. As its importance for the industry is yet to be studied, measures should be taken to avoid the infection of TVBMV in production of virus-free seed potatoes.

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