

DISEASE NOTE

**FIRST REPORT OF 'CANDIDATUS
PHYTOPLASMA ASTERIS' (GROUP
16SrI-B) INFECTING SWEET CHERRIES IN
TURKEY**

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Five-year-old sweet cherry (*Prunus avium* L.) trees, exhibiting symptoms typical of phytoplasma diseases were observed in the Turkish province of Usak during 2011. The percentage of symptomatic plants, scattered in the orchards, was nearly 40%. Samples were collected during late spring and early summer from trees showing proliferation of branches, off season flowering and decline. In order to establish phytoplasma association with these symptoms, nucleic acid was extracted from leaf midribs of 10 symptomatic and five symptomless plants. Nested PCR assays using universal phytoplasma primers P1/P7 followed by R16F2n/R2 and by 16R758f/16R1232r (Duduk *et al.*, 2013) provided positive responses for seven of the symptomatic samples. Restriction fragment length polymorphism (RFLP) analysis was performed on PCR products using restriction enzymes *Tsp*509I, *Tru*I and *Alu*I. Preliminary RFLP identification was confirmed by nested PCR assays with primers R16(I)F1/R1 (Lee *et al.*, 1994) followed by RFLP analysis, that allowed phytoplasma classification in the 16SrI-B subgroup. Since all amplicons showed identical restriction profile, according to the enzymes and primers employed, one of them was sequenced in both directions using primers R16(I)F1 and R16(I)R1. The 1,006 nucleotide long sequence, deposited in GenBank under the accession No. KF476062, showed 99.0% identity with 16S rDNA from several phytoplasmas related to 'Candidatus Phytoplasma asteris', including strains associated with cherry little leaf (GenBank AY034089) and cherry bunchy leaf (GenBank HM067754), that are affiliated to a different 16SrI subgroup (Jomantiene *et al.*, 2011). This is the first report of 'Ca. P. asteris' infecting sweet cherries in Turkey.

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**FIRST REPORT OF LEAF BLIGHT DISEASE
OF CURCUMA WENYUJIN CAUSED BY
TRICHODERMA KONINGIOPSIS
IN CHINA**

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Curcuma wenyujin Y.H. Chen et C. Ling (Zingiberaceae family) is a plant whose rhizomes have been used since time immemorial in the traditional Chinese medicine to treat jaundice, dysmenorrhea, arthralgia, hematuria, and epilepsy (Dong *et al.*, 2013). In 2013, severe symptoms of yellowing and wilt were observed on the edges of *Curcuma* leaves in Pan'an (Zhejiang province, China). Small pieces of tissues cut from diseased leaves were placed on potato dextrose agar (PDA), and incubated at 25°C in the dark. White mycelium grew from the margins of diseased tissues after two days, and a pure culture of a fungus (strain F13V-2) was obtained. Colonies grew up to about 54 mm in diameter within 33 h, and turned light green after 72 h. Conidia were green, smooth, ellipsoid, 3-4 × 2-3 μm in size (length/width ratio = 1.3 to 1.5). The internal transcribed spacer (ITS) region of rDNA was amplified with ITS1 and ITS4 primers and sequenced. Sequence analysis showed that the ITS sequence of F13V-2 (GenBank accession No. KF601689) was 100% identical to the ITS sequence of *Trichoderma koningiopsis* strain T-25 (KC884782.1). Pathogenicity tests showed that the fungus present on inoculated *Curcuma* leaves was identical morphologically to that originally observed on diseased plants, which fulfilled Koch's postulate. To our knowledge, *T. koningiopsis* has biological control potential and induces host resistance against pathogens (Samuels *et al.*, 2006). However this is the first report of leaf blight disease of *C. wenyujin* caused by *T. koningiopsis* in China.

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