DISEASE NOTE

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

K. Çaglayan¹, M. Gazel¹, C. Küçükgöl¹, S. Paltrinieri², N. Contaldo² and A. Bertaccini²

¹Mustafa Kemal University, Plant Protection Department, 31034 Antakya-Hatay, Turkey
²DipSA, Plant Pathology, Alma Mater Studiorum, Università degli Studi, Viale G. Fanin 42, 40127 Bologna, Italy

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 R16(I)F1 and R16(I)R1 (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 Tsp509I, TruI and AluI. 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.


