

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/270779391>

First Report of *Phytophthora syringae* on *Cedrus libani* in Turkey

Article in *Plant Disease* · June 2014

DOI: 10.1094/PDIS-09-13-0962-PDN

CITATION

1

READS

130

4 authors, including:



Tuğba Doğmuş-Lehtijärvi
T.C. Isparta Applied Science University

50 PUBLICATIONS 649 CITATIONS

[SEE PROFILE](#)



Gulden Aday
T.C. Isparta Applied Science University

40 PUBLICATIONS 460 CITATIONS

[SEE PROFILE](#)



Thomas Jung
Mendel University in Brno

124 PUBLICATIONS 6,094 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



tree fine root pathology [View project](#)



Exploratory project QUERRESIST 'Screening of Asian oak species for potential resistance to *Phytophthora* spp.' [View project](#)



Journals Home Books Home APS Home IS-MPMI Home My Profile Subscribe Search Advanced Search Help



About the cover for June 2014

Impact Factor: 3.02

ISSN: 0191-2917

SEARCH

Enter Keywords

- Phytopathology
 Plant Disease
 MPMI

search

Advanced Search

Resources

- Subscribe
 About Plant Disease
 First Look
 Most Downloaded Articles
 Submit a Manuscript
 Customer Care
 About My Password
 Copyright and Permissions
 Plagiarism and Ethics
 Advertise
 e-Xtra
 Open Access
 ORCID Registry

Share |

Subscribe Free alerts RSS

plant disease

Editor-in-Chief: Mark L. Gleason
 Published by The American Phytopathological Society

Home > Plant Disease > Table of Contents > Abstract
[Previous Article](#) | [Next Article](#)

June 2014, Volume 98, Number 6
 Page 846
<http://dx.doi.org/10.1094/PDIS-09-13-0962-PDN>

Disease Notes

First Report of *Phytophthora syringae* on *Cedrus libani* in Turkey

T. Dođmuş-Lehtijärvi, Süleyman Demirel University, Faculty of Forestry, 32260 Isparta, Turkey; **A. G. Aday Kaya**, Süleyman Demirel University, Yenişarbademli Vocational School, 32000 Isparta, Turkey; **A. Lehtijärvi**, Bursa Technical University, Faculty of Forestry, 16200 Bursa, Turkey; and **T. Jung**, Phytophthora Research and Consultancy, Brannenburg, Germany, and IBB/CGB Plant and Animal Genomic Group, Laboratório de Biotecnologia Molecular e Fitopatologia, University of Algarve, Campus de Gambelas, 8005-139 Faro, Portugal

Open Access.

Cedrus libani, commonly known as Lebanon cedar, is one of the most important coniferous tree species in Turkey. Its main distribution is in the Taurus Mountains in the Mediterranean Region. The total area of pure Taurus cedar forest covers 109,440 ha in Turkey, all located in the southwestern regions of the country. Due to its drought resistance, Taurus cedar has been commonly used for afforestations in these semi-arid areas (1). In September 2011, during surveys for *Phytophthora* spp. in forest nurseries in Adapazari and İzmir in eastern Turkey, initial symptoms such as death of fine roots, yellowing, and wilting of Taurus cedar seedlings were observed. Soil samples were collected from 10 symptomatic *C. libani* seedlings and isolation tests for *Phytophthora* species were carried out using leaflets from young *Quercus suber*, *Azalea* sp., and *Rhododendron* sp. saplings as baits floated over flooded soil. Necrotic baits were blotted dry, cut into small pieces, and placed on selective PARPNH carrot agar. Out growing colonies were subcultured on carrot agar and kept at 12°C for morphological and molecular identifications (2). In total, six *Pythiaceae* isolates were obtained from the *C. libani* soil samples. The isolates were investigated using a light microscope and grouped according to their morphological characteristics (3). DNA was extracted from two representative isolates using Qiagen DNeasy Plant Mini Kit following the manufacturer's instructions. PCR amplifications and sequencing of the internal transcribed spacer (ITS) region of rDNA and the β -tubulin gene were performed using ITS1 and ITS4 and Tub1 and Tub2 primer sets (4). Sequencing of the PCR products in both directions was conducted by IonTek Inc. (Istanbul, Turkey) in an ABI PRISM automated sequencer. The obtained sequences were compared with those in the GenBank and *Phytophthora* database using BLAST search. On the basis of morphological features and molecular analyses, the two isolates were identified as *Phytophthora syringae*. Morphological characteristics on carrot agar were identical with the description of *P. syringae* (2). At 20°C, colonies reached 7 cm in diameter after 1 week. Sporangia were semipapillate to non-papillate, ovoid, with average length of 59 μ m (SD \pm 2.8) (range 58 to 70 μ m). Oogonia were 38 μ m (SD \pm 5.4) in diameter (range 30 to 47 μ m) with paragynous antheridia. The morphological identification was confirmed by sequence comparison at GenBank with 99% homology for both ITS and β -tubulin. The ITS sequences of the two isolates were deposited in GenBank with the accession nos. KF430614 and KF944377. Under-bark inoculation tests with mycelia plugs were conducted with both isolates of *P. syringae* at 18°C in a growth chamber on a total of

Quick Links

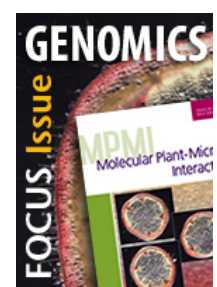
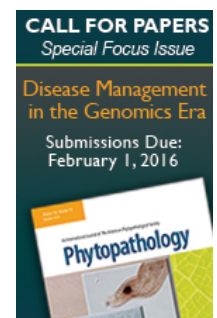
Add to favorites

E-mail to a colleague

Alert me when new articles cite this article

Download to citation manager

Related articles found in APS Journals



28.12.2015

First Report of *Phytophthora syringae* on *Cedrus libani* in Turkey — Plant Disease

six 1-year-old shoots cut from two *C. libani* trees. Lesions with an average length of 19 mm (SD \pm 6) developed after 10 days. *P. syringae* was consistently re-isolated from the margins of necrotic tissues. Control shoots remained symptomless. To our knowledge, this is the first report of damage caused by *P. syringae* on *C. libani* seedlings in forest nursery in Turkey.

References: (1) T. Çalışkan. Pages 109-130 in: Proceedings of Workshop "Hızlı gelişen türlerle ilgili rapor," Ankara, Turkey, 1998. (2) T. Jung et al. Eur. J. For. Pathol. 26:253, 1996. (3) T. Jung et al. Mycol. Res. 107:772, 2003. (4) L. P. N. M. Kroon et al. Fung. Genet. Biol. 41:766, 2004.

[Journals Home](#) | [Books Home](#) | [APS Home](#) | [IS-MPMI Home](#) | [Contact Us](#) | [Permissions](#) | [Privacy](#) | [Copyright The American Phytopathological Society](#)