plant disease

Editor-in-Chief: Alison E. Robertson
Published by The American Phytopathological Society

ISSN: 0191-2917
e-ISSN: 1943-7692

December 2018, Volume 102, Number 12
Page 2651
https://doi.org/10.1094/PDIS-03-18-0499-PDN

DISEASE NOTES

First Report of Fruit Rot in European Pear Caused by *Diaporthe eres* in Italy

D. Bertetti, Centre of Competence AGROINNOVA, University of Torino, 10095 Grugliasco, Italy; **V. Guarnaccia**, Westerdijk Fungal Biodiversity Institute, 3584 CT, Utrecht, The Netherlands; and **D. Spadaro** and **M. L. Gullino**,† Centre of Competence AGROINNOVA and DISAFA, University of Torino, 10095 Grugliasco, Italy.

Article History

Issue Date: 16 Nov 2018
Published: 8 Oct 2018
Accepted: 20 Jun 2018

During the summer periods from 2014 to 2017, an unknown rot was observed on about 150 ripe fruit of an old variety of European pear (*Pyrus communis* L.) grown in a private garden located in Torre Canavese (Torino Province, northern Italy). The prevalence of the rot in the planting was estimated at 80% incidence. External symptoms were barely visible and consisted in pale brown soft irregular spots. The internal decayed area was soft, brown, irregular, starting from the endocarp. Rotted fruit fell prematurely. Several fragments (approximately 3 × 3 × 3 mm) were taken from the margin of the internal decayed tissues of 10 fruit and cultured on potato dextrose agar (PDA). Colonies of the fungal isolate were purified and cultured on PDA, at 25 ± 1°C (14-h fluorescent light, 10-h dark). Initially, they appeared white, followed by thin aerial mycelium, later turned gray, forming concentric rings. After 20 days, colonies produced pycnidia containing hyaline, unicellular, ellipsoidal to fusiform α-conidia and hyaline, long, slender, curved β-conidia. The α-conidia measured (4.2) to 6.2 to (9.3) × (1.1) to 2.1 to (3.3) µm (n = 50), whereas the β-conidia were (13.5) to 20.8 to (29.7) × (0.6) to 1.0 to (1.4) µm (n = 50). The morphological characteristics were similar to those of *Diaporthe* species (anamorph: *Phomopsis* spp.) (Gomes et al. 2013). The identification of a representative isolate (DB14AGO27) was determined by partial sequencing of five genomic loci (internal transcribed spacer [ITS], *tef1*, *cal*, *his3*, and *tub2*), as described in Guarnaccia and Crous (2017). The obtained ITS, *tef1*, *cal*, and *his3* sequences (GenBank accession nos. MH063907, MH063913, MH063895, and MH063901) and the *tub2* sequence (MH063919) showed 99 and 100% identity, respectively, with those of ex-epitype isolate of *Diaporthe eres* Nitschke CBS 138594 (KJ210529, KJ210550, KJ434999, KJ420850, and KJ420799) (Udayanga et al. 2014). In the pathogenicity tests, four ripe European pear fruit were surface disinfested in 1% sodium hypochlorite, washed, and wounded (three wounds per fruit) using a sterile hypodermic needle. A suspension of α- and β-conidia obtained from a 20-day-old culture of the isolate DB14AGO27 grown on PDA was inoculated with 30 µl of conidial suspension (5 × 10^5 conidia/ml). Four control fruit were wounded and treated with

sterilized water. All the fruit were incubated at temperatures ranging from 23 to 27°C. After about 3 days the first symptoms started on inoculated fruit. After 6 days, rots around the inoculated fruit were evident, and the same pathogen was consistently reisolated and identified. Noninoculated fruit remained healthy. The pathogenicity test was repeated inoculating nine European pear fruit with the same method. Six days after the inoculation, rot diameters on inoculated fruit ranged from 18 to 44 (average, 33) mm, and Koch's postulates were satisfied reisolating *D. eres*. Controls remained symptomless. Previously, *D. eres* has been recently detected in Italy, causing stem canker on *Prunus persica* (Prencipe et al. 2017). To our knowledge, this is the first report of *D. eres* on European pear in Italy. The economic importance of this disease could be a potential threat for this crop widely grown in Italy.

References:

Section: *Choose*

Gomes, R. R., et al. 2013. Persoonia 31:1. https://doi.org/10.3767/003158513X666844 [Crossref] [ISI] [Google Scholar]

Guarnaccia, V., and **Crous, P. W.** 2017. IMA Fungus 8:317. https://doi.org/10.5598/imafungus.2017.08.02.07 [Crossref] [ISI] [Google Scholar]

Prencipe, S., et al. 2017. Plant Dis. 101:1052. https://doi.org/10.1094/PDIS-12-16-1770-PDN [Abstract] [Google Scholar]

Udayanga, D., et al. 2014. Fungal Divers. 67:203. https://doi.org/10.1007/s13225-014-0297-2 [Crossref] [ISI] [Google Scholar]

Citation