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First Report of Fruit Blight Caused by Arthrinium xenocordella on Pistacia vera in Italy

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Pistacia vera L. is a nut tree native to Central Asia and the Middle East widely cultivated in Sicily, Italy. In July 2017, a new disease was observed on approximately 450, 70-year-old P. vera plants (var. "Bianca"), in a commercial orchard in Western Sicily (Agrigento Province), Italy. More than 30% of the fruits showed disease symptoms. The initial symptom was external brown discoloration on the epicarp of immature fruits. As the disease progressed, the discoloration turned dark-brown to black and covered up to 50% of the fruit surface. As a consequence, infected fruit was blighted and cling onto the shoot. Internal fruit tissues showed discoloration of the endocarp, sometimes leading to darkening of the kernel. Small sections of thirty diseased fruits were surface disinfected for 1 min in 1.5% sodium hypochlorite solution, rinsed in sterile water, placed on potato dextrose agar (3.9% PDA, Oxoid) amended with 100 mg/liter of streptomycin sulfate (Sigma-Aldrich), and then incubated at 25 ± 1°C for seven days. A fungus was consistently isolated from affected tissues of fruits forming flat colonies, with moderate aerial mycelium and surface pale luteous with patches of olivaceous-grey, reverse pale luteous. Single-spore isolates on PDA produced conidia with a globular to ellipsoid shape, (7–)9–10(–11) µm long and 6–7 µm wide. Setae were erect, brown, subcylindrical, 1-septate, with a truncate base, 100 µm tall, 5–8 µm in diam, straight to irregularly curved. The identification of 4 representative isolates was determined by partial sequencing of the

rDNA internal transcribed spacer (ITS) region and β-tubulin (TUB) gene, as described in Crous and Groenewald (2013). The obtained ITS sequence (GenBank Accession No. MG921593) and tub2 sequence (GenBank Accession No. MG921594) of the isolate CPC33875 (Di3A-PV72) showed 100% and 99% identity with those of Arthrinium xenocordella tester isolate (KF144925 and KF145013), respectively. Pathogenicity tests were conducted on immature fruits of P. vera. Thirty fruits were inoculated by spraying conidial suspension (1 × 105 conidia/ml) of one isolate (Di3A-PV72) obtained from a 15-day-old culture. The same number of fruits were sprayed with sterile distilled water and served as controls. Plants were kept at 25 ± 1°C and 95% relative humidity on a 12-h fluorescent light/dark regimen. After seven days, the tested isolate caused symptom identical to those observed in the field. Moreover, approximately 50% infected fruits were covered by whitish mycelium of the fungus. Control fruit were asymptomatic. A. xenocordella was re-isolated from the infected fruit and identified as previously described. A. xenocordella was recently described from soil in Zimbabwe (Crous and Groenewald 2013) and Arthrinium spp. have been reported as pathogens on kernel of barley and on wheat (Martínez-Cano et al. 1992; Mavragani et al. 2007). To our knowledge, this is the first report of A. xenocordella as plant pathogen and causing fruit blight on P. vera.