

First Report of Leaf Blight Caused by *Colletotrichum fiorinae* on *Mahonia aquifolium* in Italy[A. Garibaldi,](#)[D. Bertetti,](#)[S. Matić,](#)[I. Luongo,](#)[V. Guarnaccia,](#) and[M. L. Gullino](#)**Affiliations****Published Online:** 10 Jan 2020 <https://doi.org/10.1094/PDIS-10-19-2104-PDN>

Mahonia aquifolium (Berberidaceae) is an ornamental shrub with leathery leaves and fragrant yellow flowers followed by purplish blue colored berries. Starting in June 2019, a leaf blight was observed on plants of *M. aquifolium* grown in a private garden located in Biella province (northern Italy). Affected leaves showed irregularly circular, brown, slightly sunken, necrotic lesions with a well-defined border, surrounded by a chlorotic halo. Lesions expanded up to 10 mm in diameter and eventually coalesced. The disease affected 50% of about 50 plants grown in the garden. Isolations were carried out three times from diseased samples (three branches per sample). Several affected leaves were rinsed in sterile water, and then little pieces of affected tissues were excised from the margin of lesions and plated on potato dextrose agar (PDA) medium. Pure fungal colonies were obtained from the original isolation plates. Initially, they were whitish and then ranged to gray green on the upper surface and showed a pale orange tinge on the reverse side. Colonies formed a pale orange conidial mass. Conidia were unicellular, cylindrical with acute ends to fusiform, and measured 9.9 to 14.0 × 3.0 to 4.3 µm (average 11.9 to 3.7 µm, $n = 50$). A single isolate was grown on PDA, and the DNA of the fungus was extracted by using the E.Z.N.A. Fungal DNA Mini Kit (Omega Bio-Tek, Darmstadt, Germany). The identification of a representative strain (code 19/18) was determined by partial sequencing of three genomic loci (ITS, *act*, and *tub*), as described in [Guarnaccia et al. \(2019\)](#). Three sequences with 517 (ITS), 245 (*act*), and 714 (*tub*) bp (GenBank accession nos. MN515146, MN520417, and MN520416, respectively) were obtained. A BLASTn analysis ([Altschul et al. 1997](#)) of all these sequences showed 100% identity with the ex-type CBS 128517 (GenBank accession nos. MH865005, JQ949613, and JQ949943, respectively) of *Colletotrichum fiorinae* (Marcelino and Gouli) Pennycook. For the pathogenicity test, the representative isolate 19/18 of the pathogen was grown on PDA, under a light/dark regime of 15 h/9 h, at 23 to 27°C. A conidial suspension was obtained from the pure cultures and was sprayed (10 ml per plant) at the concentration of 1×10^5 CFU/ml on the leaves of three 2-year-old healthy *M. aquifolium*. Three control plants were sprayed with the same amount of sterile water. All the plants were kept in a humid chamber for 7 days and were maintained outdoors for the whole duration of the test, at 15 to 26°C. The first symptoms appeared on the inoculated current year leaves after 8 days, whereas on the older leaves the first foliar lesions developed about 20 days after the inoculation. In both cases, necrosis developed as little spots at first, and then they enlarged, and leaves showed symptoms similar to those described above. *C. fiorinae* was reisolated from affected inoculated leaves and identified through sequencing of *act* and *tub* genes. Controls remained symptomless. Pathogenicity testing was repeated twice with the same results. On *M. japonica*, it was

reported as *Glomerella cingulata* (teleomorph of *C. gloeosporioides*) in Japan ([Kobayashi 2007](#)) and *C. japonicum* in Austria ([Bedlan 2012](#)), whereas in Italy it was described as *C. nymphaeae* ([Damm et al. 2012](#)) and *C. mahoniae* ([Fabbricatore 1950](#)). To our knowledge, this is the first report of *C. fiorinae* on *M. aquifolium* in Italy, as well as worldwide. The spread of *C. fiorinae* on *M. aquifolium* and the difficulty of its management may discourage the use of this host, especially in low-maintenance gardens, in which the usage of this evergreen shrub is increasing in Italy.