Disease Note

FIRST REPORT OF LEAF NECROSIS AND WILT OF ROSEMARY INDUCED BY CLADOSPORIUM HERBAROIDES IN IRAN

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In Spring 2013, wilted and collapsed rosemary (Rosmarinus officinalis) plants were found in a greenhouse in the Hamedan province of Iran. Disease symptoms consisted of wilting and leaf necrosis followed by death. Leaf fragments from the edge of leaf lesions were surface-sterilized in 5% NaOCl for 60 sec. Eight-day-old cultures were subcultured on synthetic nutrient agar (SNA) at room temperature (23±2°C). Morphological observations (Bensch et al., 2012) showed that conidiophores were both macro- and micronematous and branched in a few cases. Macronematous conidiophores measured 30-230×3-5 μm and micronematous conidiophores were 3-65×2-3 μm. Conidia formed by macronematous conidiophores were catenate, subglobose, obovoid, limoniform, ellipsoid to cylindrical, 3-33×3-6 μm in size and 0-3 septate. Conidia formed by micronematous conidiophores were paler and narrower, mostly formed in unbranched chains, limoniform, narrowly fusiform, almost filiform to subcylindrical, 15-31×2-3 μm in size and 0-3 septate. A portion of the translation elongation factor 1-α (TEF) gene was PCR-amplified using primers EF1-526-F and EF1-156-R (Bensch et al., 2012) and sequenced. The TEF gene sequence was 99% similar to that of C. herbaroides (accession No. KM052582). Pathogenicity was tested by spraying a conidial suspension (1×10⁵ spores/ml) in sterile water on healthy leaves of 2- to 3-week-old greenhouse-grown rosemary plants. Control plants were sprayed with sterile water. Symptoms appeared two weeks post inoculation on inoculated plants whereas control plants remained asymptomatic. The same fungus (C. herbaroides) was reisolated from inoculated plants, thus fulfilling Koch’s postulates. To our knowledge, this is the first report of C. herbaroides on rosemary in Iran.


Disease Note

FIRST REPORT OF NIGROSPORA LEAF SPOT ON PENNISETUM AMERICANUM IN IRAN

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During August-September 2013, a new leaf spot disease was observed on pearl millet (Pennisetum americanum) in the Birjand district of South Khorasan province of Iran. Nearly 20% of plants showed irregularly shaped yellow to brown lesions that with time turned dark brown and caused leaf shredding. A fungus was consistently isolated from symptomatic tissues on potato dextrose agar (PDA) which formed one-celled, smooth, black, spherical to subspherical conidia (5-10 μm in diameter). Each conidium was born on a hyaline vesicle at the tip of each conidiophore. Fungal colonies were initially white, then became grayish-brown. The fungus was identified as Nigrospora oryzae (Berk. et Br.) Petch. The internal transcribed spacer (ITS) region of ribosomal DNA was amplified using ITS4/ ITS5 primer pair and the PCR product was sequenced. Comparison of the sequence revealed 99-100% similarity to N. oryzae (GenBank accession Nos. Fj496318 and GQ222186). Thus, morphological and molecular data supported the identification of this fungus as N. oryzae. Pathogenicity tests were performed by placing 5-mm diameter mycelial plugs from 7-day-old colonies onto pearl millet leaves. While the inoculated isolates caused symptoms similar to those in the field within 7-10 days, no infection was observed on control leaves. N. oryzae has been reported on Pennisetum purpureum and P. typhoides in Africa and Asia (Farr and Rosman, 2014) but this is the first report of this fungus causing a disease on P. americanum.


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