DISEASE NOTE

FIRST REPORT OF POWDERY MILDEW, CAUSED BY ARTHROCLADIella MOUGEOTII, ON GOJI BERRY IN TURKEY

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Lycium barbarum, known as Goji berry or wolfberry, is a Chinese medicine plant in the family Solanaceae, and has been recently cultivated in Bolu, Turkey. During autumn 2015, severe powdery mildew symptoms were observed on Goji berry plantation area. White to grayish white fungal mycelia were shown on leaves and stems. Also, brownish discolorations and defoliation were exhibited. Microscope examination showed that conidia were formed in chains, hyaline, short-cylindrical and their length and width ranged from 19 to 31 (mean = 26.2) µm and from 10 to 14.5 (mean = 13.2) µm, respectively. Apothecial structures were not observed. The fungus was identified as Arthrocladiella mougeotii on the basis of morphological characteristics and the host specialization (Braun, 1987). To verify the identification, DNA isolation was performed by using the conidia collected by scraping from surface of infected leaves. The rDNA internal transcribed spacer (ITS) region including 5.8S rDNA was amplified using primers ITS5 (White et al., 1990) and p3 (Kusaba and Tsuge, 1995) and sequenced. The amplified 640 bp product (GenBank accession No. KX017568) revealed 99% genetic similarity with the sequences of an A. mougeotii isolate previously reported (AB022380). Pathogenicity was performed by gently pressing diseased leaves onto young leaves of one-year-old healthy plants. Non-inoculated Goji berry plants were used as control. All plants were transferred to a greenhouse. A month later, the fungus having identical morphological features was observed only on infected plants. To the best of our knowledge, this is the first report of A. mougeotii on Goji berry in Turkey.


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Received May 10, 2016
Accepted July 6, 2016

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FIRST REPORT OF ASPERGILLUS MINISCLEROTGENES AS A POSTHARVEST PATHOGEN OF SOYBEAN SEEDS FROM PAKISTAN

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In August 2014, seeds of Glycine max in storage rooms at Lahore, Pakistan, were found to be colonized by an unknown fungus. For pathogen isolation, seeds were incubated on moist blotters, developing a green mass of fungal spores. Spores were transferred to Czapek Dox agar medium and incubated at 25 ± 2°C. After 7 days of incubation colonies were velvety, green and floccose, consisting of white vegetative mycelium and acquired the diameter of 3–4 cm. Globose dark brown sclerotia were produced, smaller than A. flavus. Radiate conidial heads were observed that were mostly biseriate however uniseriate heads were also present. Conidiophores were hyaline, coarsely roughened and 0.9-1.2 mm in length. Vesicles were subglobose to globose, 25-40 µm in diameter, while metulae were 8-12 µm and phialides 5-8 µm long. Conidia were pale or olive green, 3.5-5 µm in diameter. Pathogen was identified as Aspergillus minisclerotigenes (FCBP1333) (Pildain et al., 2008) and differentiated from A. flavus and A. parvisclerotigenes by studying aflatoxin profiles (B1, B2, G1, and G2) using thin-layer chromatography. Amplification of DNA fragment of 650 bp was done using the universal primers ITS1/ITS4 (Batista et al., 2008) and total genomic DNA as a template (White et al., 1990). BLAST analysis of this strain (GenBank accession No. KF564033) showed 99% similarity to different strains (JX292091, JF412776, KF841549, JF412775). Phylogenetic analysis of identified pathogen and closely related species of A. flavus group by the Maximum Likelihood Hood tree method and profiling of DNA bands examined in the members of Aspergillus section Flavii amplified by three different Inter Simple Sequence Repeat (ISSR) primers clearly confirmed the pathogen identity. Surface sterilized healthy seeds were soaked in spore suspension (10^4 spores ml^-1) from a one week old pathogen culture for 30 s, dried and transferred onto moist blotting paper in Petri plates. Control seeds were treated with sterilized distilled water. After 7 days incubation at 25°C, 90% of seeds were colonized and re-isolation of the same pathogen confirmed the Koch’s postulates. To our knowledge, this is the first report of A. minisclerotigenes seed rot from Pakistan.


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Received May 10, 2016
Accepted August 24, 2016