

## DISEASE NOTE

### FIRST REPORT OF POWDERY MILDEW CAUSED BY *CYSTOTHECA LANESTRIS* ON *QUERCUS CRASSIPES* IN MEXICO

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Red oak or Tuchi (*Quercus crassipes*) is an ornamental endemic species of Mexico. On November 9, 2016, powdery mildew was observed on leaves of Tuchi in Santa Fe, Mexico City. The symptoms and signs included deformed leaves, irregular necrotic lesions on both sides of the leaf, premature leaf drop, chasmothecia and mycelium. A reference specimen (CMPH-ECO23S) was deposited in the Herbarium of the Colegio de Postgraduados. The fungus produced light brown to dark reddish chasmothecia immersed in the mycelium. Chasmothecia were grouped or dispersed, 99-111 µm in diameter, composed of polygonal peridial cells of 12-18 µm; with simple, sinuous, poorly developed, short, or almost absent mycelial appendages (4-4.5 µm wide) that were interlaced with the surrounding mycelium. The single ascus was hyaline, ellipsoid or ovoid to globose, sessile, 80-91 × 55-68 µm to 134 × 85 µm. The ascospores were hyaline, ellipsoid to ovoid, 25-32 × 18-22 µm. Conidiophores and conidia were not observed. Amplification of ITS was carried out using primers ITS4 and ITS5. The PCR product (459 bp) was sequenced and deposited in GenBank (accession No. MF170000). The obtained sequence showed 100% similarity to AF011289 from *Q. agrifolia*. No ex-type sequence of *C. lanestrís* is in GenBank, but the type and this sequence are from *Q. agrifolia* in California, USA. Based on morphological and molecular characteristics, the fungus observed on *Quercus crassipes* was identified as *Cystotheca lanestrís* (Braun and Cook, 2012). To our knowledge, this is the first report of this fungus causing powdery mildew of red oak in Mexico.

Braun U., Cook R.T.A., 2012. Taxonomic Manual of the Erysiphales (Powdery Mildews). CBS-KNAW Fungal Biodiversity Centre. Utrecht, The Netherlands.

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### FIRST REPORT OF PEPPER SPOT DISEASE OF LYCHEE CAUSED BY *COLLETOTRICHUM SIAMENSE* IN TAIWAN

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In 2013, fruits and leaves of *Litchi chinensis* [No Mai Tsz (73-S-20)] with symptoms of pepper spot (Cooke and Coates, 2002) were collected from Yunlin county in Taiwan. Diseased leaf tissue was surface-sterilized with 70% ethanol and placed on acidified potato dextrose agar (APDA). A single spore isolate (C-1001) with aerial white mycelium that turned gray at 25°C and a 12 h photoperiod produced salmon conidial masses after 10 days. Conidia were hyaline, aseptate, cylindrical, 14.3 (12.77-15.38) × 4.9 (3.95-5.56) µm in size. For further identification, partial sequences of actin (ACT), calmodulin (CAL), chitin synthase (CHS-1), glyceraldehyde-3-phosphate dehydrogenase (GAPDH), and ribosomal internal transcribed spacer (ITS) (Weir *et al.*, 2012) were generated and deposited in GenBank (accession Nos. MF098594, MF135496, MF098596, MF098598 and MF135494, respectively). Bayesian inference analysis using multilocus alignment with the deposited sequences placed the isolate (C-1001) in the same clade with the ex-type of *C. siamense* (ICMP 18578) (Weir *et al.*, 2012). Based on cultural characteristics, conidial morphology (Sutton, 1992) and phylogenetic analysis, the fungus was identified as *Colletotrichum siamense* (Penz.) Penz. & Sacc. Pathogenicity tests were conducted in the field. Young leaves of lychee cv. 'No Mai Tsz (73-S-20)' were inoculated using a conidial suspension (1.5 × 10<sup>6</sup> conidia/ml) and covered with moist plastic bags for 48 h. Dark lesions of the pepper spot disease developed on leaves 4 weeks after inoculation. *C. siamense* was reisolated from the inoculated leaves. To our knowledge, this is the first report of *C. siamense* causing pepper spot disease of lychee in Taiwan.

Cooke A.W., Coates L.M., 2002. Pepper spot: a preharvest disease of lychee caused by *Colletotrichum gloeosporioides*. *Australasian Plant Pathology* 31: 303-304.

Sutton B.C., 1992. The genus *Glomerella* and its anamorph *Colletotrichum*. In: Bailey J.A., Jeger M.J. (eds). *Colletotrichum: Biology, Pathology and Control*, pp 1-26. CAB International, Wallingford, UK.

Weir B.S., Jonson P.R., Damm U., 2012. The *Colletotrichum gloeosporioides* species complex. *Studies in Mycology* 73:115-180.

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