

## DISEASE NOTE

**FIRST REPORT OF *CLADOSPORIUM CLADOSPORIOIDES* CAUSING SCAB DISEASE ON PAPAYA IN IRAN**

H.A. Baharvandi and D. Zafari

*Department of Plant Protection, College of Agriculture, BuAli Sina University, Hamedan, Iran*

In March of 2012 a survey was conducted to determine the incitant of papaya (*Carica papaya*) scab disease in the Hamedan province of Iran. Symptoms consisted of pale green and water-soaked lesions on leaves. A fungus was consistently isolated from diseased tissues on potato dextrose agar (PDA) at  $23 \pm 2^\circ\text{C}$ . Morphological observations were carried out on Synthetic Nutrient Agar (SNA) medium as described by Bensch *et al.* (2012). Conidiophores were macronematous or semimacronematous. Ramoconidia ( $15\text{-}50 \times 2.5\text{-}5 \mu\text{m}$ ) were straight and cylindrical with up to three septa. Small terminal conidia ( $3\text{-}6 \times 1.5\text{-}2.5 \mu\text{m}$ ) were subglobose to ovoid and aseptate. Intercalary conidia ( $5\text{-}12 \times 2\text{-}4 \mu\text{m}$ ) were ellipsoid to ovoid and aseptate. A portion of the translation elongation factor 1- $\alpha$  gene was amplified (Bensch *et al.*, 2012) and sequenced (GenBank Accession No. KP998105). A BLAST search showed 99% similarity with GenBank sequences belonging to *C. cladosporioides*. Pathogenicity tests were conducted in a greenhouse at  $25^\circ\text{C}$ . Inoculum was prepared by rinsing a 7-day-old culture on PDA with sterile water and adjusted to  $10^6$  spores/ml. Three papaya seedlings (cv. Horng-Fe) were sprayed with the spore suspension and covered with plastic bags for three days, while control treatments were sprayed with sterile water. Symptoms appeared five days post inoculation on all inoculated seedlings and *C. cladosporioides* was consistently reisolated, whereas control seedlings showed no symptoms. To our knowledge, this is the first report of *C. cladosporioides* causing papaya scab in Iran.

Bensch K., Braun U., Groenewald J.Z., Crous P.W., 2012. The genus *Cladosporium*. *Studies in Mycology* **72**: 1-401.

Corresponding author: D. Zafari  
E-mail: Zafari\_d@yahoo.com

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**FIRST REPORT OF POWDERY MILDEW CAUSED BY *ERYSIPHE ALPHITOIDES* ON *QUERCUS RUGOSA* IN MEXICO**E.H. Nieto-López<sup>1</sup>, S.G. Leyva-Mir<sup>2</sup>, V. Ayala-Escobar<sup>1</sup>, C. Nava-Díaz<sup>1</sup>, and J.M. Tovar-Pedraza<sup>1</sup>

<sup>1</sup>Fitopatología, Instituto de Fitosanidad, Campus Montecillo, Colegio de Postgraduados. Km 36.5 Carretera México-Texcoco, Montecillo, Texcoco, 56230. Estado de México, México

<sup>2</sup>Departamento de Parasitología Agrícola, Universidad Autónoma Chapingo. Km 38.5 Carretera México-Texcoco, Chapingo, Texcoco, 56230. Estado de México, México

During September to November of 2013 and 2014, typical symptoms of powdery mildew were detected on the leaves of netleaf oak (*Quercus rugosa*) trees growing in the Distrito Federal (Mexico). Symptoms appeared as irregular necrotic lesions with greyish powdery masses on both sides of the leaves. The preliminary identification of fungus was done based on of morphological characters. Mycelium was amphigenous, persistent, greyish, in dense patches or effuse. Hyphal appressoria were lobed and solitary. Conidiophores were hyaline, erect, straight, length up to about  $86 \mu\text{m}$ . Foot cells were cylindrical, straight, followed by 1-3 shorter cells, and forming conidia singly. Conidia were hyaline, obovoid-doliiform,  $27\text{-}37 \times 16\text{-}24 \mu\text{m}$ , with germ tubes terminal to subterminal. Conidial appressoria were lobed. Chasmothecia were not observed. The morphological characters were consistent with those of the anamorphic state of *Erysiphe alphitoides* (Braun and Cook, 2012). To confirm the identification, the complete internal transcribed spacer (ITS) region of rDNA was amplified using primers ITS4 and ITS5, and sequenced directly. The resulting 647 bp sequence was deposited in GenBank (accession No. KR269919). A GenBank BLASTn search of this sequence revealed 99% similarity with three ITS sequences of *E. alphitoides* (AB292699, AB292702 and AB292704). Based on the morphological data and ITS sequence analysis, the fungus was identified as *E. alphitoides*. To our knowledge, this is the first report of *E. alphitoides* causing powdery mildew on netleaf 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.

Corresponding author: J.M. Tovar-Pedraza  
E-mail: jmtovar@colpos.mx

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