DISEASE NOTE

First Record of Powdery Mildew Caused by Erysiphe quercicola on Chinese Apple (Zizyphus lotus L) in Egypt

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Powdery mildew caused by Erysiphe quercicola is a widespread in several trees in tropical and sub-tropical countries. In November 2020-2021 during an examination of Zizyphus lotus trees growing in Giza, and Qaliobia Governorates, several trees were observed with symptoms of powdery mildew on the leaves, young shoots, and fruits. Powdery mildew mycelium covered large parts of the leaf surfaces, young shoots, and fruits as shown in Fig. 1 (A, B and C). Powdery mildew-infected leaves were collected and kept for further studies.

Morphological characteristics of the fungus were studied. The conidiophores bear fragmented, foot cell cylindrical straight or slightly curved at base and non-chained conidia, which are produced singly at the apex of the conidiophores, the primary conidiospores are ellipsoid or ovoid shape, with a rounded apex and truncate base. Meanwhile, mature conidia are mainly doliiform and formed singly. First, mycelial samples were removed from the infected leaves on a microscope slide. The slides were examined under light microscope. Conidiophore produces conidia singly, and consists of a foot-cell, straight or occasionally slightly curved at the base, basal septum at the branching point, followed by one or two cells up to the same length as the foot-cell (Fig. 2).

According to the studied morphological characteristics, the causal fungus was identified as E. quercicola (Braun and Cook, 2012 and Kumar, et al. 2018), the cause of powdery mildew on Zizyphus lotus.

DNA was extracted from fungal mass on the infected leaf and amplified for the partial of internal transcribed spacer (ITS) regions with the primers ITS1/ITS4 and sequenced (White et al. 1990). The sequence analysis by BLASTn search of 552 bp (GenBank accession no. MW364272) indicated >99% similarity with Erysiphe quercicola with the accession Nos. MT569439, MT569438, MN394113, KM260690, KM260685, KM260686, KM260688 and KM260687 (Fig. 3). The Zizyphus lotus leaves were inoculated on leaves, all inoculated leaves developed powdery mildew symptoms after 10 days, whereas the control plants remained symptomless. The morphology of the fungus on the inoculated leaves was identical to that initially observed on the infected leaves of Zizyphus lotus. To our knowledge, this is the first record of Erysiphe quercicola in Egypt.

Keywords: Powdery Mildew, Erysiphe quercicola, Chinese Apple, Zizyphus lotus

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Fig. (2): Showing asexual morph, conidiophore and conidiospore of E. quercicola

Fig. (1): Symptoms of powdery mildew on A: Leaf surface, B: Young shoot and C: Fruits
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Fig. (3): The BLASTn search analysis phylogenetic tree of 552 bp (GenBank accession no. MW364272) indicate >99% similarity with *Erysiphe quercicola* accession Nos. MT569439, MT569438, MN394113, KM260690, KM260685, KM260686, KM260688 and KM260687.

REFERENCES

