Euphorbia hirta L. a new host record of Oidium species from Nepal.

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ABSTRACT

Euphorbia hirta L. which was found parasitized by the Oidium species (imperfect stage of Erysiphales), on the leaves, is considered as a new host record for the fungus. It was collected in the premises of Nepal Academy of Science and Technology (NAST), Khumaltar, Nepal The description of the fungus and distribution is provided here with.

Keywords: Erysiphales, Oidium, Podosphaera, Euphorbia, Nepal

1. INTRODUCTION


2. MATERIALS AND METHODS

The present study has been based on recent collection, which was found in the premises of Nepal Academy of Science and Technology (NAST), Khumaltar, Nepal

Photographs were taken. The specimens were examined in the laboratory. The host parasitized by the fungus was identified as Euphorbia hirta L. The identification of the fungal species was based on monographs of U, Braun & R. T. A. Cook (2012). Moreover the specimen was sent to Prof. U. Braun, Germany and Prof. T. Tokamatsu, Japan, for authentic identification. The host collected was recorded as new for this powdery mildew in Nepal. The specimens gathered are housed in National Herbarium & Plant Lab (KATH), Godawari and Martin-Luther-Universität, Germany. The microscopic description and distribution fungus in the globe has been provided below.

DESCRIPTION OF SPECIES

Podosphaera xanthii (Castagne) U. Braun & Shishkoff in Meeboon J, Hidayat I, Takamatsu S 2016 – Notes on powdery mildews (Erysiphales) in Thailand I. Podosphaera sect. Sphaerotheca. Plant Pathology & Quarantine 6(2), 142–174, Fig. (below)


Mycelium on stems and leaves, often covering the entire lower surface of leaves, white to greyish sometimes turning into brown, effuse, thin to dense. walls smooth to rough; hyphae branched, substraight to wavy, septate, thin-walled, smooth, hyaline to subhyaline, 3–9 μm wide; hyphal appressoria sometimes poorly developed, indistinct to nipple-shape, solitary; conidiophores erect, straight to flexuous, arising from the upper surface of hyphal mother cells, single or occasionally two on a hyphal cell, 90–160× 10–17.5 μm; foot cells cylindrical, straight, 25–78× 11–16 μm, sometimes slightly constricted at the basal septum or slightly swollen at the base, followed by 1–4 shorter cells, forming 3 – 4 conidia chains, with a basal septum at the branching point of the mycelium; conidia ellipsoid-ovoid to doliiform, rarely cylindrical, 26–38 × 13–40 μm with conspicuous fibrosin bodies. Chasmothecia not found.

Examination of specimen – Oidium sp. parasitic on leaves of Euphorbia hirta L., Nepal Academy of Science and Technology

Plant Euphorbia hirta L. Mycelium and conidia (microphotographs x 40)

of the fungus
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(NAST), Khumaltar, Lalitpur, Nepal. 2077.6.22 (2020.10.8). MK Adhikari no. 2077.6. Host is new to Nepal.

Distribution - The fungus is common in Asiatic region. The host is distributed in between Tropical (150m) and Temperate (1500 - 2000m) region in Nepal.

COMMENTS


Podospaera xanthii [= Podospaera phaseoli (Z.Y. Zhao) U. Braun & S. Takam.,] was reported parasitic on Macrotyloma uniflorum (Lam.) Verdc. from Bhanimandal, Lalitpur [erroneously called as Dolichos biflorus; Dolichos uniflorus and written as Phaseolus acontifolius (by Rajbhandari 1976 in Adhikari 2017)]. This species was reported as Sphaerotheca fuliginea (Schltdl.:Fr.) Poll. on Macrotyloma uniflorum and Erysiphe cichoracearum DC. parasitic on leaves of Coreopsis sp., Calendula officinalis L., Bidens pilosa L. Siegesbeckia orientalis L. and Vigna unguiculata (L.) Walp. from Kathmandu valley (Adhikari 2014, 2020)


According to U. Braun and R. T. A. Cook (2012) the phylogenetic tree and DNA sequence of this fungus is identical to those of Podospaera on Euphorbia hirta from Thailand. So based on the phylogenetic tree and molecular examinations Podospaera euphorbiicola-hirtae is treated as synonym of Podospaera xanthii. In this species the conidia are formed in chains. The conidia likely contains fibrosin-bodies when fresh. This species is very common in Asia on Euphorbia hirta and E. tithymaloides.

ACKNOWLEDGEMENT

I express my warm cordial thanks to Prof. Dr. Uwe Braun, Martin-Luther-Universität, Institut für Biologie, Bereich Geobotanik, Herbarium, Neuwerk Halle (Saale), Germany and S. Takamatsu, Mie University, Japan for their tremendous generous help in identification. Ms. Kamala S. Adhikari (wife) and Er. Grish Adhikari (son) for their help in various ways.

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from Nepal, Published by K. S. Adhikari, Kathmandu, GPO Box no. 21758, Nepal. 40 pg.


