



Diaporthe rubiae, A New Microfungi Record For Türkiye

Diaporthe rubiae, Türkiye için Yeni Bir Microfungus Kaydı

Şanlı Kabaktepe^{*}, Sıddık Doğan^{*}

Battalgazi Vocational School, Malatya Turgut Özal University, Battalgazi, Malatya, Turkey.

ABSTRACT

The microfungi *Diaporthe rubiae* Fabre (*Diaporthaceae*), on *Rubia tenuifolia* d'Urv. (*Rubiaceae*) is reported for the first time from Kayseri (Yahyalı) province in Türkiye. The morphological and microscopical features of this microfungi is described with figures.

Key Words

Yahyalı, microfungi, new record, Sordariomycetes, Türkiye.

ÖZ

Rubia tenuifolia d'Urv. (*Rubiaceae*) üzerinde bulunan *Diaporthe rubiae* Fabre (*Diaporthaceae*) mikrofungusu Türkiye için ilk olarak Kayseri (Yahyalı) yöresinden tespit edilmiştir. Bu mikrofungusun morfolojik ve mikroskobik yapıları şekillerle tanımlanmıştır.

Anahtar Kelimeler

Yahyalı, mikrofungus, yeni kayıt, Türkiye.

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Correspondence to: Ş. Kabaktepe, Malatya Turgut Özal University, Battalgazi Vocational School, Malatya, Turkey.

E-Mail: sanli.kabaktepe@ozal.edu.tr

INTRODUCTION

Diaporthe Nitschke is a large cosmopolitan genus and some species occur on a wide range of host plants with about 92 species [1]. Most have conidial states belonging to the form genus *Phomopsis*, characterized by somewhat chambered pycnidia embedded in the host tissue and yielding innumerable fusiform hyaline conidia, usually with a oil drop at each end. Many have also a second conidial state, the so-called B-spore, thread-like and often hooked like a walking stick [2].

Based on recent fieldwork, 11 species of *Diaporthe* is now known from Turkey. These species are *Diaporthe ampelina* (Berk. & M.A. Curtis) R.R. Gomes, Glienke & Crous on *Vitis vinifera* L., *Diaporthe amygdali* (Delacr.) Udayanga, Crous & K.D. Hyde on *Corylus avellana* L., *Diaporthe carpini* (Pers.) Fuckel on *Carpinus betulus* L., *Diaporthe convolvuli* (Ormeno-Nuñez, Reeleder & A.K. Watson) R.R. Gomes, Glienke & Crous on *Convolvulus arvensis* L., *Diaporthe detrusa* (Fr.) Fuckel on *Berberis vulgaris* L., *Diaporthe eucommiae* (F.X. Chao & P.K. Chi) Y.H. Gao & L. Cai on *Actinidia chinensis* var. *deliciosa* (A.Chev.) A.Chev. *Diaporthe foeniculina* (Sacc.) Udayanga & Castl. on *Citrus limon* (L.) Osbeck, *Diaporthe juglandina* (Fuckel) Nitschke on *Juglans regia* L., *Diaporthe kunzeana* Sacc. on *Carpinus betulus* L. *Diaporthe neoviticola* Udayanga, Crous & K.D. Hyde on *Vitis vinifera* L. and *Diaporthe rudis* (Fr.) Nitschke on *Fagus orientalis* Lisky, but there is not any record of *Diaporthe rubiae* [3-12]. Nevertheless, numerous new records and new species can still be expected as a result of going on fieldwork in Türkiye because of its high diversity of vascular plants in Türkiye [13].

The current study aims to make contribution to the mycobiota of Turkey and presents microfungi collected first time from Kayseri (Yahyalı) province in Türkiye.

MATERIALS and METHODS

Field surveys were conducted in Kayseri (Yahyalı), Türkiye. During these surveys, specimens of *Diaporthe rubiae* displaying spot-like symptoms were carefully collected. Infected plant samples were photographed both in situ under natural field conditions and subsequently under a stereomicroscope (Euromex BioBlue BB. 1153-PL) to capture detailed morphological features of the infection structures. The collected specimens were preserved

and deposited at the Herbarium of the Department of Botany, Inonu University, Malatya, Turkey, under the accession number INU 14016. Herbarium specimens were carefully documented preserved for future reference and comparative studies.

Free-hand sections and scratch mounts of infected plant tissues, were prepared using lactophenol as a mounting medium. The slides were observed under a light microscope (Euromex BB.1153-PL), and detailed observations of microscopical features, including size, shape, ornamentation, and structural features, were recorded. Digital micrographs were captured using an attached Euromex CMEX-5f. 500f camera to document critical diagnostic features. Twenty spores of each spore type were randomly selected for detailed microscopic examination and measurement. Spore dimensions and additional morphological parameters were measured using Image Focus Alpha software, ensuring precise and repeatable results.

The host plant was identified following the taxonomic framework provided by Henderson [14]. To ensure accurate fungal nomenclature, the names and taxonomic placements of the microfungi were cross-referenced with the Index Fungorum database (www.indexfungorum.org), a globally recognized fungal taxonomy resource. Host plant nomenclature and family classification adhered to the standards established by The Plant List (<http://www.thepantlist.org>). This ensured consistency and scientific accuracy in host and fungal species identification.

RESULTS and DISCUSSION

Ascomycota

Sordariomycetes

Diaporthales

Diaporthaceae

Diaporthe Nitschke

Diaporthe rubiae Fabre, Anns Sci. Nat., Bot., sér. 6 9: 46 (1879) (Figure 1).

Synonymys:

Phoma rubiae Sacc.,

Phomopsis rubiae (Sacc.) Traverso,

Pycnidia scattered or arranged in shorth series on the host tissues, oblong, up to 0.3 mm in length, blackish, soft and very incomplete. A-spores very few and more especially on the leaves, ellipsoid-oblong, subacut with a oil drop at each end, 5,5-7,5 (-8,5) x 2,5-3 µm, hyaline. B-spores very numerous and crowded, filiform, curved, hyaline, 15-25 x 1-1,5 µm.



Figure 1. *Diaporthe rubiae* A. dried herbarium specimen, B. SM view of *Diaporthe rubiae* on sori, C. LM view of spores.

Specimens examined – On *Rubia tenuifolia* d’Urv. (*Rubiaceae*) Kayseri: Yahyalı, Kirazlıbağ village, 1250-1400 m, 25.06.2013, Ş. Kabaktepe 7150 (INU 14016).

Distribution: On species of *Rubia* L. (*Rubiaceae*), widespread in Armenia, Portugal [15-16].

CONCLUSION

The pycnidial stage of *D. rubiae* belonging to the *Phomopsis* which occurred on tissues of *Rubia*. *D. rubiae* is the only species on *Rubia*. is easily distinguished from other *Diaporthe* species by its soft and very incomplete pycnidia, very few A-spore and B-spores forming hard bodies on host tissues.

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