

A NEW HOST SPECIES FOR *Uromyces behenis* (DC.) UNGER

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Abstract: In this study, *Silene echinospermoides* Hub.-Mor. (*Caryophyllaceae*) is reported as a new host species for the rust fungus *Uromyces behenis* (DC.) Unger. A short description, distribution and photographs of macro- and micromorphological features of the fungus were given.

Key words: *Uromyces*, rust fungi, new host, Turkey.

Uromyces behenis (DC.) Unger İçin Yeni Bir Konakçı Tür

Özet: Bu çalışmada, *Silene echinospermoides* Hub.-Mor. (*Caryophyllaceae*), *Uromyces behenis* (DC.) Unger pas mantarı türü için yeni bir konakçı tür olarak rapor edilmiştir. Bu fungusun kısa deskripsiyonu, yayılışı ve makro ve mikromorfolojilerine ait fotoğrafları verilmiştir.

Anahtar kelimeler: *Uromyces*, pas mantarları, yeni konak, Türkiye.

Introduction

Silene L. is one of the largest genera of flowering plants in the world, comprising ca. 750 species of which approximately half occur in the Mediterranean basin. The southern parts of Balkan Peninsula and southwest Asia are the two main centers for the genus (Greuter 1995). *Silene* is represented in Turkey by 31 sections and 138 species, of which 42% are endemic taxa (Genç *et al.* 2007).

Rust species recorded so far on *Silene* as the host belong to the genera *Aecidium* Pers., *Puccinia* Pers. and *Uromyces* (Link) Unger. *Uromyces* is known to include 12 species worldwide which rely on *Silene* species and 5 of these species were determined in Turkey by Bahçecioğlu & Kabaktepe (2012).

In the present study, a new host *Silene* species, *S. echinospermoides*, was reported for the rust fungus *Uromyces behenis*, contributing to its host range of.

Materials and Methods

Fungi samples and the host plants were collected in 2016 from Antalya province in Turkey. The host specimens were prepared according to the conventional herbarium techniques. Host plants were identified using the Flora of Turkey and the East Aegean Islands (Cullen & Coode 1967). Fungal spores were scraped from dried host specimens and mounted in lactophenol.

Microphotographs of the spores were taken under a light microscope (Noveks B series 1000). The current names of fungi were given according to www.indexfungorum.org. Names of host plants and families are given according to <http://www.theplantlist.org>. Voucher specimens are deposited in İnönü University Herbarium (INU).

Results

The identification of the fungal samples showed that the fungus sampled on *S. echinospermoides* was *Uromyces behenis* (DC.) Unger, Einfluss des Bodenstc.: 216 (1836). (Fig. 1). Macro- and micromorphological features of the fungus were given below.

Aecidia usually hypophyllous, seated on spots that vary in size and yellow or purple. It is very conspicuous, solitary or clustered, cup shaped, whitish yellow. Aecidispores densely and minutely verruculose, yellowish, 15-21µm in diam. Uredinia aecidioid. Teleutosori hypophyllous and on the stems, often mixed with uredinia, scattered, gregarious or circinate, covered by epidermis, brownish black or black. Teleutospores subglobose or obovoid, rounded above 25-37 × 19-27µm, wall smooth, pale brown, up to 1µm at apex, pore apical, pedicels up to 80µm, faintly yellowish, persistent.



Fig. 1. Images of the rust fungus *Uromyces behenis* and the host species *Silene echinospermoides*. A- a general view of the dried herbarium specimen of the host; B- stereo microscopic view of the infected host plant; C- light microscopic view of Aecidiaspores; D- light microscopic view of Teleutospores.

Table 1. Host range and distribution of *Uromyces behenis* in Turkey.

Host	Distribution in Turkey	References
<i>Silene</i> spp.	Kahramanmaraş	(Bahçecioglu et al. 2006, Gobelez 1962)
<i>Silene alba</i> Muhl. ex Rohrb.	Kars, Ardahan	(Bahçecioglu & Kabaktepe 2012)
<i>Silene echinospermoides</i> Hub.-Mor.	Antalya	The record reported in the present study
<i>Silene italica</i> (L.) Pers.	Sivas	(Bahçecioglu & Yıldız 2005)
<i>Silene marschallii</i> C. A. Mey.	Erzurum	(Henderson 1964, Tamer et al. 1989)
<i>Silene vulgaris</i> (Moench) Garcke	Sivas, Ordu	(Bahçecioglu & Yıldız 2005, Kabaktepe & Bahçecioglu 2006).

Specimen examined: *Silene echinospermoides* Hub.-Mor. (*Caryophyllaceae*), Turkey, Antalya, Kumluca, Yukarı Alakır, 1200m. 30/05/2016, A. Özçandır 1454.

Discussion

Uromyces behenis, known as the yellow champion rust on *Silene*, is a common rust fungi widespread in Europe and Asia and was recorded so far on 25 different

Silene species (Farr & Rossman 2016). It was also reported on *Oberna cserei* (*Caryophyllaceae*) Ikonn. from Ukraine (Dudka et al. 2004). The yellow champion name comes from aecidia on the host plant. *U. behensis* is known found to infect 5 *Silene* taxa in Turkey (Table 1). As a result of this study, the number of *Silene* species serving as a host for *U. behensis* reached to 26.

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