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Gerhard Bedlan

Septoria eferdingensis Plenk – a new *Septoria*-species on *Aesculus hippocastanum*

Septoria eferdingensis Plenk – eine neue *Septoria*-Art an *Aesculus hippocastanum*

Abstract

Septoria eferdingensis Plenk, a new species collected on *Aesculus hippocastanum* L. differs from other species of *Septoria* on this host in the diameter of the pycnidia, length, width and number of septa of the conidia.

Key words: *Septoria eferdingensis* Plenk, *Aesculus hippocastanum* L., symptoms, systematics, new species

Zusammenfassung

Septoria eferdingensis Plenk, eine neue Art an *Aesculus hippocastanum* L. unterscheidet sich von anderen Arten der Gattung *Septoria* auf diesem Wirt im Durchmesser der Pyknidien, der Länge, Breite und Anzahl der Septen der Konidien.

Stichwörter: *Septoria eferdingensis* Plenk, *Aesculus hippocastanum* L., Symptome, Systematik, neue Art

Introduction

Infections of *Septoria* on horse-chestnut have been found at Gstöttenau (a small village near Eferding/Upper-Austria) every year since 1995. From literature we know four different *Septoria*-species occurring on this common tree, *Septoria aesculi*, *S. aesculina*, *S. aesculicola* and *S. hippocastani*.

All of these fungi cause small, white or grey leafspots, which are scattered all over the leaf surface (Fig. 1, 2). Typically, they are surrounded by a thin red or dark brown margin. In the centre of these spots the pycnidia can be found, often single, up to three at the most (Fig. 3). The pycnidia are visible with the naked eye and are dark brown or black. Via the ostiolum the typical filiform, hyaline conidia (Fig. 4) are set free. The pycnidia occur on both sides of the leaf.

Under the microscope, significant differences in the diameter of the pycnidia, the length and the width and the number of septa of the conidia were found compared to the well known species on horse-chestnut trees.

Astrid Plenk (1998) published the finding and the original diagnosis of this *Septoria* species. This original diagnosis is invalid, because not written in Latin. Therefore the original diagnosis follows below in Latin and I recommend to name this new fungus *Septoria eferdingensis* Plenk.

Results

For identification and comparison the following material, mostly borrowed from herbarium collections of the Natural History Museum in Vienna, was examined:

The holotype of *Ascochyta aesculi* Lib. =[*Septoria aesculi* (Lib.) Westend.], M.-A. Libert, Pl. Crypt. Arduennae. – Fasc. II, (NR 154); Herbarium mycologicum Romanicum, *Septoria aesculi* ([Lib.] Westend.) from Bucharest 1926; Pilzherbar Franz Petrak, *Septoria aesculi* Prov. Kiev 1913.

Institute
Universität für Bodenkultur, Institut für Garten-, Obst- und Weinbau, Wien, Österreich

Correspondence
Univ.-Doz. Dr. Gerhard Bedlan, Universität für Bodenkultur, Institut für Garten-, Obst- und Weinbau, Gregor-Mendel-Straße 33, A 1180 Wien, Österreich, E-Mail: gerhard.bedlan@alva.at

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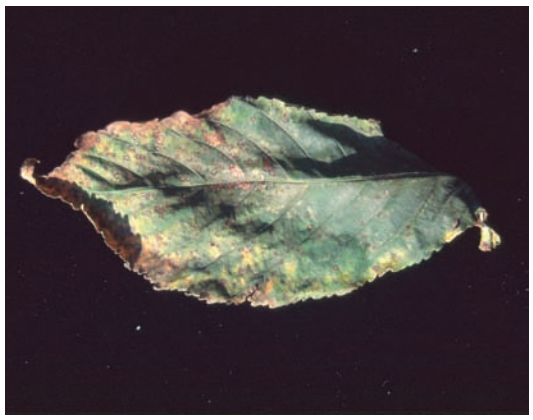

Fig. 1. Symptoms of *Septoria eferdingensis* on an upper surface of a leaf of *Aesculus hippocastanum*.

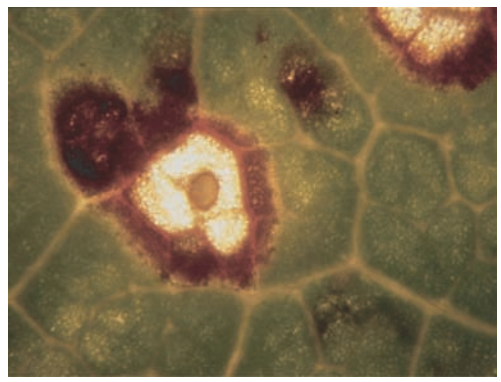

Fig. 3. Leaf spot with pycnidium of *Septoria eferdingensis*.

Fig. 2. Symptoms of *Septoria eferdingensis* on an upper surface of a leaf of *Aesculus hippocastanum* (part of a leaf).

Fig. 4. Conidia of *Septoria eferdingensis*, stained with Wittmann's blue (Wittmann, 1970).

The holotype of *Septoria aesculina* Thüm. De Thüm. Mycotheca universalis (NR 2079) Kalksburg/Wien 1879; Kabát et Bubak Fungi imperfecti exsiccati, *Septoria aesculina* Thüm. (NR 60) Welwarn 1901; J. Smarods Fungi latavici exsiccati (NR 1090) *Septoria hippocastani*, Riga 1941.

The pycnidia and conidia were measured with by the electronical image analysis system „Kontron Image Analyses" Model KS 400 Version 1.2 and 2.0.

The main difference between *Septoria aesculina*, *S. hippocastani*, *S. aesculicola* and the new species was the lack of septa in the conidia of the first three species. Furthermore they differ in length and width. According to literature (Rabenhorst, 1901) the conidia of *Septoria aesculina* are quite short (36-44 µm) but 3,5 – 5 µm wide. *Septoria aesculicula* is characterised by very short (20-30 µm) and thin – only 1 µm-conidia. *Septoria hippocastani* has fairly long (55-60 µm) and thin – about 2,5 µm - conidia.

Sep*toria aesculi* is most similar to the new species. According to literature (Kickx, 1867, Fl. I. p.431) the conidia are 50 to 60 µm long, 3 to 3,5 µm thick and have 3-4 septa. In our own measurements the conidia of *S. aesculi* were found to be 35,57 – 63,71 µm long and 3,13 – 4,57 µm thick. Passerini (Rabenhorst, 1901) says that the conidia are only about 32 µm long. The diameter of the pycnidia of *Septoria aesculi* ranges from 66 to 168,3 µm.

The diameter of the pycnidia of the new species is 125 – 252 µm. The conidia are 40 – 80 µ long, 1,7 – 2,8 µm wide and have 1 – 4 septa. The width of the pycnidia wall amounts to 10,36 – 17,06 µm (Tab. 1).

Septoria eferdingensis Plenk sp. nov.
Maculae parvae, orbiculatae incano-albicantes, pycnidia 1-3, epi- et hypophylla, fusco-nigricantia; Pycnidia 125 – 252 µ diam., pariete 10 – 17 µm crasso.

Conidia filiformia, hyalina recta vel curvata, utrimque obtusiuscula, ± attenuata, 1 – 4 septata, 40 – 80 µm × 1,7 – 2,8 µm.

Type: Austria, Gstöttenau/Oberösterreich (Upper Austria). On living leaves of *Aesculus hippocastanum* L. 17 08 1997. A. Plenk (holotype, hb W)

Tab. 1. *Septoria* species on *Aesculus hippocastanum*

Species	Length of Conidia in µm	Width of Conidia in µm	Number of Septa
Septoria aesculina Thümen typus	36 – 44 *)	3,5 – 5 *)	0 *)
	36,25 – 44,3 x)	3,4 – 4,8 x)	0 x)
Septoria aesculicola (Lib.) Westend	20 – 30 **)	1 **)	0 **)
Septoria hippocastani Berk. et Br.	55 – 60 **)	2,5**)	0 **)
	54,6 – 61,5 x)	2,3 – 2,6 x)	0 x)
Septoria aesculi (Lib.) Westend typus	50 – 60 *)	3 – 3,5 *)	3 – 4 *)
	35,57 – 63,71 x)	3,13 – 4,57 x)	3 – 4 x)
Septoria eferdingensis Plenk typus	40 – 80 x)	1,7 – 2,8 x)	1 – 4 x)

*) according to original descriptions
**) according to literature
x) data based on personal measurements

The type specimen has been deposited at the Department of Botany, Natural History Museum, Vienna.

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