

## SEPTORIA BIRGITAE SP. NOV., A NEW PATHOGEN CAUSING LEAF SPOTS ON LACTUCA SATIVA

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### SUMMARY

*Septoria birgatae* Bedlan sp. nov. collected on *Lactuca sativa* L. differs from other species of *Septoria* on *Lactuca* and *Mulgedium* in the diameter of the pycnidia, length, width and number of septa of the conidia.

### KEY WORDS

*Septoria birgatae* Bedlan sp. nov.; *Lactuca sativa* L.; symptoms; biology.

In the cool and mostly rainy year 1996 the leaves of lettuce (*Lactuca sativa* L.) frequently showed brown spots. After carrying out microscopic tests we found out that it was a fungus of the genus *Septoria*.

In absence of suitable hosts, however, the pathogen can only survive for a short time. For the related species *Septoria lactucae* Pass. it is said that the fungus is transported over long distances together with the seed, whereas from plant to plant it is transferred by water drops (rain, irrigation), animals, tools and harvesting (CHUPP & CHERF, 1960). This should also apply to *Septoria birgatae*.

The first samples of *Septoria birgatae* were taken from biological farming in 1996, from the lettuce varieties „Kermit“, „Libusa“ and „Florial“. Finally lots of lettuce varieties all over Austria were found to be infested. *Septoria birgatae* has also been found in lettuce quite frequently in Germany (KOFÖET, 1996).

First symptoms are small, yellowish areas on the exterior leaves of lettuce. These may very soon turn brown, and finally spread over the whole leaf. Even young plants may be infested. On the spots, which are angular, round and sometimes with visible margin, the numerous pycnidia of the fungus can be seen with the naked eye.

The pycnidia are scattered over the spots and sometimes grouped together. The pycnidia are dark brown and blackish and give off the thready hyaline conidia, typical of *Septoria*, via the ostiolum. In humid or wet conditions the disease can occur very heavily. The conidia of *Septoria* spp. are dispersed through water drops during rain or irrigation. BOND (1941) described this form of dispersion for *Septoria lactucae* Pass.

The older leaves are usually the first to be infested. If the plants are badly infested, peduncles and flower organs, and thus also the seeds, can be infected during seed production.

This fungus should also survive in the seeds and remainders of the lettuce like *Septoria lactucae* Pass. (SMITH, 1961).

Table: *Septoria* species on *Lactuca* and *Mulgedium*

SPECIES	PYCNIDIA DIAMETER IN $\mu$	PYCNIDIA, DIAMETER AVERAGE IN $\mu$	LENGTH OF CONIDIA: MIN.-MAX. AVERAGE IN $\mu$	WIDTH OF CONIDIA: MIN.-MAX. AVERAGE IN $\mu$	NUMBER OF SEPTA
<i>S. lactucae</i> Pass., Typus	51,71- 136,25	83,00 90 <sup>2)</sup>	13,65-39,49 22,4 <sup>1)</sup>	1,04-2,42 1,71 <sup>1)</sup>	0
<i>S. lactucina</i> Lobik	82,3-125	103,70	39,5-52,6 46,10	3-3,3 3,2	1-3
<i>S. lactucicola</i> E. & M.	42,16- 82,84	66,26	18,92-42,82 30,80 <sup>2)</sup>	0,99-2,18 1,58	1-3
<i>S. schembelii</i> Melnik, Typus	25,78- 82,19	58,70	16,94-55,50 35,58	1-2,62 1,67	0
<i>S. ludoviciana</i> Ell. & Ev.	75-80	77,50	15-25 20,00	2	0
<i>S. fernandezii</i> Unamuno	112	-	26-30,5 <sup>3)</sup> 28,25	1,6-2 <sup>3)</sup> 1,8	1
<i>S. sikangensis</i> Petrak	60-150	105,00	20-52 36,00	2-3 2,5	3-6
<i>S. unicolor</i> Wint.	very small <sup>3)</sup>	very small <sup>3)</sup>	26-32 29,00	1	0 -
<i>S. sleumeri</i> Petrak	60-80	70	15-42 28,5	1-1,5 1,25	0
<i>S. mulgedii</i> Thüm.	92,54- 201,40	167	26-28 <sup>4)</sup>	4 <sup>4)</sup>	1
<i>S. birgatae</i> Bedlan (Wallem/Bgld).	80,57- 194,33	135,25	18,92-39,03 28,87	1,28-2,30 1,81	1-3
<i>S. birgatae</i> Bedlan (Harthausen, FRG)	85,96- 195,75	139,72	16,25-36,73 27,48	1,51-2,85 2,19	1-3
<i>S. birgatae</i> Bedlan (Lustadt,FRG)	90,26- 169,93	132,14	19,60-36,89 27,88	1,65-3,08 2,28	1-3

<sup>1)</sup> according to the original description: 25-30  $\mu$  long and 1,7-2  $\mu$  wide; all other data based on personal testings

<sup>2)</sup> according to the original description 25-30 $\mu$  long; all other data based on personal testings

<sup>3)</sup> according to the original description

<sup>4)</sup> according to the original description, all other data based on personal testings

***Septoria birgitae* BEDLAN sp. nov.**

Maculae dispersae, orbiculares vel ellipticae, saepe irregulares, in foliis, primo exterioribus, saepe in marginibus. Pycnidia, hypophylla, irregulariter dispersa, subepidermata, globosa vel ellipsoidea, 80,57 - 195,75  $\mu$  diam., ostiolo planum, 22 - 45  $\mu$  ( $\varnothing$  33  $\mu$ ) in diam. Septa pycnidiorum inter 5 et 20  $\mu$  lata, saepissime inter 9 et 13  $\mu$ .

Conidia filiformia, hyalina, recta vel curvulata vel falcata, utrinque obtusiuscula,  $\pm$  attenuata, 1-3-septata, 18,92 - 39,03  $\mu$  x 1,28 - 2,30  $\mu$ .

Ad folia viva *Lactucae sativae* L. var. *capitatae* L. (var. „Sander“) in Wallem/Burgenland, Austria, 25.7.1996.

A speciebus aliis in generibus *Lactuca* et *Mulgedio* vigentibus differt imprimis pycnidiorum diametro 80 - 200  $\mu$ , saepissime 132 - 139  $\mu$  longo, septisque conidiorum 3.

The type specimen has been deposited in the Museum of Natural History, Vienna: *Septoria birgitae* Bedlan, collected on live leaves of *Lactuca sativa* L. var. *capitata* L., variety „Sander“, in Wallem/Bgld., Austria, on 25.7.1996

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