## **Disease Notes**

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**Outbreak of Leaf Spot of Saponaria Caused by** *Alternaria saponariae* **in California.** S. T. Koike and D. M. Henderson, University of California Cooperative Extension, Salinas 93901; S. A. Tjosvold, University of California Cooperative Extension, Watsonville 95076; and E. G. Simmons, Crawfordsville, IN, 47933. Plant Dis. 83:694, 1999; published online as D-1999-0428-01N, 1999. Accepted for publication 21 April 1999.

Saponaria (Saponaria vaccaria [= Vaccaria hispanica]) is a Caryophyllaceae plant that is grown commercially in California as a cut flower. In 1998, a leaf spot disease devastated the commercially grown saponaria in coastal California. The entire saponaria crop was completely unmarketable because of extensive leaf spotting. Symptoms consisted of circular, brown, necrotic leaf spots with diameters up to 8 mm and concentric zones of lighter and darker tissue. Chlorotic borders developed around the spots. Conidia from leaves were obclavate, usually had 7 transverse and 1 to 4 longitudinal septa, and narrowed gradually toward the apex into a blunt-tipped, unbranched beak cell. The spore body measured 69 to 90 (to 119)  $\times$  17 to 21 (to 25)  $\mu m$ , with the distinctive beak cell 17 to 53 µm long. Conidia formed short chains on host tissue. The fungus was identified as Alternaria saponariae (Peck) Neergaard (2). For pathogenicity tests, six representative isolates were grown on V8 juice agar under fluorescent tube lighting. Potted saponaria were sprayed with either conidial concentrations (1  $\times$  10e5 conidia per ml) or water. Plants were incubated in a chamber with a humidifier for 48 h and then maintained in a greenhouse (23 to 25°C). After 14 days, leaf spots similar to the original symptoms developed on all inoculated plants, and the pathogen was reisolated. Plants sprayed with water were symptomless. The experiment was repeated and the results were similar. Using the same isolates and method, we inoculated carnation (Dianthus caryophyllus), sweet William (Dianthus barbatus), and saponaria. However, disease developed only on saponaria. While A. saponariae on saponaria was reported previously in California (1), this is the first report to characterize the pathogen and document that isolates are pathogenic on saponaria but not on other commercial Caryophyllaceae hosts.

References: (1) K. F. Baker and L. H. Davis. Plant Dis. Rep. 34:403, 1950. (2) P. Neergaard. Aarsberet. J. E. Ohlsens Enkes Plantepat. Lab. No. 3, 1938.

**First Report of Powdery Mildew, Caused by** *Erysiphe cichoracearum,* **on Coneflowers.** P. L. Sholberg, J. H. Ginns, and T. S. C. Li, Agriculture and Agri-Food Canada, Pacific Agri-Food Research Centre, Summerland, B.C., Canada V0H 1ZO. Plant Dis. 83:694, 1999; published on-line as D-1999-0430-01N, 1999. Accepted for publication 27 April 1999.

Purple coneflowers (Echinacea purpurea) are grown in North America and Europe for their medicinal properties and as ornamental plants. In September 1997 and again in 1998, a previously undescribed disease was noticed on fully grown coneflower plants in Summerland and Oliver, British Columbia. Mycelia were observed on stems, foliage, and flowers, and distinct dark red to black, round (approximately 5 mm in diameter) lesions were observed on the flower petals. The disease appeared similar to powdery mildews that have been reported on numerous genera of the Asteraceae. Samples of the diseased tissue were examined and the salient features of the fungus on two specimens were determined: cleistothecia infrequent, subglobose or flattened on the side next to the leaf surface, 121 to 209 µm in diameter; epidermal (surface) cells 20 µm in diameter; appendages hyphoid, 5 µm in diameter, up to 200 µm long; asci, 10 to 19 in each cleistothecium, broadly ellipsoid, 47 to  $85 \times 28$  to 37 µm with a short stalk, about 8 to 13 µm long and 8 µm in diameter; ascospores, immature, two per ascus, ellipsoid to broadly ellipsoid, 17 to  $25 \times 11$  to 13 µm, thin walled, hyaline, and smooth; conidia oblong with sides slightly convex and apices truncate, 27 to 40  $\times$  14 to 20  $\mu m$ , walls hyaline, thin, smooth. Based on the occurrence of asci that contained two ascospores and the hyphoid appendages on the cleistothecia we concluded that the fungus was Erysiphe cichoracearum DC. Damage due to this disease was minimal in 1997 and 1998 because it developed very late in the growing season and occurred sporadically within the plantings. In order to complete Koch's postulates, Echinacea purpurea plants grown in the greenhouse were inoculated with a conidial suspension (105 to 106 conidia per

ml) from field-infected plants. Powdery mildew first appeared 3 months later, eventually infecting leaves and stems of 12 of 49 inoculated plants. It was distinctly white and in discrete patches on leaves, compared with coalescing dark brown areas on the stems. Microscopic examination of the conidia confirmed that they were *E. cichoracearum*. Although powdery mildew caused by *E. cichoracearum* has been widely reported on lettuce, safflower, and other cultivated and wild Compositae, we found no reference to it on *Echinacea* spp. in Canada (1,2), the U.S. (3), or elsewhere in the world (4). The specimens have been deposited in the National Mycological Herbarium of Canada (DAOM) with accession numbers 225933 and 225934 for Oliver and Summerland, B.C., respectively.

*References*: (1) U. Braun. Beih. Nova Hedwigia 89:1, 1987. (2) I. L. Conners. 1967. An annotated index of plant diseases in Canada and fungi recorded on plants in Alaska, Canada, and Greenland. Canada Dept. of Agric. Pub. 1251. (3) D. F. Farr et al. 1989. Fungi on Plants and Plant Products in the United States. American Phytopathological Society, St. Paul, MN. (4) J. Ginns. 1986. Compendium of plant disease and decay fungi in Canada, 1960-1980. Agriculture Canada Pub. 1813.

The Distribution of Fusarium Wilt of Blackeyed Cowpeas within California Caused by *Fusarium oxysporum* f. sp. *tracheiphilum* Race 4. S. N. Smith, D. M. Helms, and S. R. Temple, Department of Agronomy and Range Science, University of California, Davis 95616-8515; and C. Frate, University of California, Cooperative Extension Farm Advisor, Visalia 93291-4584. Plant Dis. 83:694, 1999; published on-line as D-1999-0430-02N, 1999. Accepted for publication 29 April 1999.

Fusarium wilt of blackeyed cowpeas has been known in California since the 1930s, and breeding for resistance to this disease pathogen has been a continuous effort. During the 1960s and 1970s, California Blackeye 5 (CB 5) cowpea (Vigna unguiculata L. Walp.), a widely grown cultivar of the time, became increasingly diseased by Fusarium oxysporum f. sp. tracheiphilum (Fot) Race 3 (2) throughout the growing regions of California. University of California cultivars CB 46 and CB 88 (1) were developed for resistance to Fot Races 1, 2, and 3. CB 46 is currently the principal blackeye cultivar grown on the majority of the acreage in the San Joaquin Valley. In 1989, a new race we designate "Fot Race 4" was isolated from wilted plants at a single field site in Stanislaus County. In years prior to identification, Fot Race 4 had caused severe wilt of CB 46 and CB 88 in this field. Even though the new Fot Race 4 remained confined to a small area for a number of years, sources of host plant resistance to Fot Race 4 were identified, hybridized, and screened, resulting in new progeny with desirable commercial agronomic characteristics. As observed in Stanislaus County, F. oxysporum f. sp. tracheiphilum Race 4 has the potential to cause serious crop damage, depending on virulence and soil inoculum levels, which may vary from year to year. In 1997 and 1998, an entirely different area in the southern San Joaquin Valley, about 140 miles from the original site in Stanislaus County, was found to have plants infected with Fot Race 4. Diseased plants were collected from patches in three separate CB 46 or CB 88 field sites in Tulare County. About 30 cultures were isolated from the diseased plants, which showed stunting, yellowing, and vascular discoloration. In greenhouse fusarium dip tests CB 46, CB 88, CB 5, and several Fot Race 4 resistant breeding lines were inoculated with all the collected isolates and evaluated. CB 46, CB 88, and CB 5 proved to be susceptible to these isolates, showing typical Fot Race 4 symptoms. The Fot Race 4 pathogen was then reisolated from greenhouse-grown, diseased stem tissue of CB 46, CB 88, and CB 5. These findings emphasize the importance of vigilance and necessity of continual disease surveys. They serve as an early alert for the University of California breeding program, and validate local cooperation with University of California Extension Farm Advisors. As a result of this effort new cultivar candidates with resistance to Fot Race 4 are in the final phases of multi-year commercial testing.

*References*: (1) D. M. Helms et al. Crop Sci. 31:1703, 1991. (2) K. S. Rigert and K. W. Foster. Crop Sci. 27:220, 1987.

**First Report of** *Pestalotiopsis guepini* **on Loquat in Argentina.** A. E. Perelló and S. Larran, Facultad de Cs. Agrarias y Forestales, Universidad Nacional de La Plata. Fitopatología. CONICET- CIC, calle 60 y 119 (1900) La Plata, Buenos Aires, Argentina. Fax: 54-0221-4252346. Email: healippi@isis.unlp.edu.ar. Plant Dis. 83:695, 1999; published online as D-1999-0519-01N, 1999. Accepted for publication 13 May 1999.

Loquat, Eriobotrya japonica (Thunb.) Lindl., is used as an ornamental plant in home gardens in the La Plata area of Buenos Aires, Argentina. During spring 1998, loquat branches with spotted leaves and fruits were submitted to the Plant Disease Diagnostic Laboratory. Symptoms on leaves consisted of small (2 to 5 mm in diameter), circular to oblong, greenish brown lesions that expanded to amphigenous, isolated, or confluent, dark brown spots. On fruits the disease appeared as circular to elongated, sunken spots. Advancing lesions spread over the surface resulting in the death of the fruit. Acervuli were observed within lesions. Isolations from symptomatic tissue onto acidified potato dextrose agar medium consistently yielded white fungal colonies of sparse aerial mycelium with acervuli containing black, slimy spore masses. The fungus was initially identified as Pestalotiopsis guepini (Desmaz.) Steyaert based on conidial and cultural characteristics (1), and the identification was confirmed by Institute Spegazzini, La Plata, Buenos Aires, Argentina. Loquat branches with fruit and 3- to 6-month-old loquat plants were mechanically injured and sprayed with a conidial suspension of one of the P. guepini isolates  $(4.5 \times 10^5 \text{ per ml})$ . Plants were incubated in a moist chamber for 48 h and then maintained in a greenhouse. After 6 days, lesions similar to the original symptoms were observed on the inoculated plant and P. guepini was reisolated, confirming Koch's postulates. Control plants sprayed with distilled water remained symptomless. This is the first report of P. guepini causing leaf and fruit spots on loquat in Argentina.

Reference: (1) J. B. H. J. Desmazières. Ann. Sci. Nat. Ser. 2. 13:181, 1840.

First Report of Root and Collar Rot by *Sclerotium rolfsii* on Apple Trees in Italy. L. Corazza, A. Belisario, and E. Forti, Istituto Sperimentale per la Patologia Vegetale, Via C. G. Bertero 22, 00156 Roma, Italy. Plant Dis. 83:695, 1999; published on-line as D-1999-0506-02N, 1999. Accepted for publication 4 May 1999.

Sclerotium rolfsii Sacc. (teleomorph Athelia rolfsii (Curzi) Tu & Kimbrough) is a polyphagous, soilborne plant pathogen. In summer 1998, a sudden death of 2-year-old apple trees (Malus domestica Borkh.) cv. Royal Gala grafted on M9 rootstock was observed in an orchard near Rome, Italy. Symptoms were stunted vegetation, leaf chlorosis, and root and collar rot. A fungus identified as S. rolfsii was observed producing sclerotia and whitish mycelial strands on root and collar bark. Isolations from roots and at the margin of subcortical necrosis on the collar consistently yielded S. rolfsii colonies on potato dextrose agar (PDA); sclerotia developed within 7 days. Koch's postulates were fulfilled by inoculating 10 1-year-old apple tree cv. M9 rootstocks, grown in 3.5-liter pots, with an S. rolfsii isolate grown for 1 week on PDA at 25°C. One ground plate per plant was used, placed around collar and main roots. Five control plants were treated with PDA only. Rootstocks were kept in the greenhouse at  $26 \pm 2^{\circ}$ C. Within 2 months, 70% of inoculated plants died, with marked necrosis girdling the collar. The other inoculated plants showed a general decline, with widespread necrosis on collars and main roots. Control plants remained healthy. S. rolfsii was reisolated from collars and roots of symptomatic plants. S. rolfsii has been recorded on apple trees in the U.S., India, China, and Israel. In Italy, it is destructive on several crops, and was recently recorded on walnut (1). This first outbreak of S. rolfsii on apple in Italy may have been favored by exceptionally warm late spring and summer temperatures.

Reference: (1) A. Belisario and L. Corazza. Plant Dis. 80:824, 1996.

First Report of *Fusarium oxysporum* Causing a Leaf Twisting Disease on *Allium cepa* var. *ascalonicum* in Sri Lanka. P. U. Kuruppu, Louisiana State University, Baton Rouge 70803. Plant Dis. 83:695, 1999; published on-line as D-1999-0517-02N, 1999. Accepted for publication 12 May 1999.

A disease of shallot onions, *Allium cepa* var. *ascalonicum*, that caused yield losses of up to 20 to 30% in some fields was reported from Kal-

pitiya Peninsula in the North Western Province of Sri Lanka in the late 1980s. Disease symptoms consisting of chlorosis followed by curling and twisting of leaves and abnormal elongation of the neck region appeared after germination of the onion bulbs, subsequently causing plant collapse. Symptomatic plants occurred randomly in most fields and the disease was prevalent throughout the year. Tissue pieces from leaves and the neck region of symptomatic plants plated on potato dextrose agar containing 1% streptomycin (PDAS) produced purplish pink fungal colonies identified as Fusarium oxysporum. Pathogenicity tests were performed with single-spore fungal isolates grown at 25°C for 14 days on PDAS. Shallot onion cv. Vathalan was inoculated by soaking bulbs, pierced with a sterilized needle, in a spore suspension containing  $2 \times 10^6$  spores per ml for 10 min. Control bulbs were wounded, and soaked for 10 min in sterilized water. Bulbs were then planted in sterile sand and maintained in a green house at 25 to 28°C. After 2 to 3 weeks, typical symptoms, as observed in the field, developed in plants produced from bulbs inoculated with the F. oxysporum isolate. Symptoms were not observed on plants from the control bulbs. Koch's postulates were confirmed by reisolating the same fungus from the neck region of diseased plants. Onion twister disease described by Ebenebe (1) also had been observed in this region in Sri Lanka during 1992-1993. There were differences between these two diseases in disease symptoms and disease development in the field. Acervuli of Colletotrichum spp. were always detected in lesions of the neck region, as well as on leaf blades, of plants severely affected by onion twister disease. This disease developed from foci in fields that spread over time. Moreover, onion twister disease occurred only from October until January, coinciding with the rainy season.

Reference: (1) A. C. Ebenebe. Plant Dis. 64:1030, 1980.

**Damping-off of Swiss Chard, Caused by** *Rhizoctonia solani,* in California. S. T. Koike, University of California Cooperative Extension, Salinas 93901; and K. V. Subbarao, Department of Plant Pathology, University of California, Davis, and located at the U.S. Agricultural Research Station, Salinas 93905. Plant Dis. 83:695, 1999; published on-line as D-1999-0517-01N, 1999. Accepted for publication 4 May 1999.

In California, various leafy vegetables are planted at extremely high seeding rates (up to three million seed per acre), grown to the four- to eight-leaf stage, then mechanically clipped and bagged for market as "spring mix" or "baby leaf" salad products. The crops are planted in separate strips, usually four to 16 beds of each, and include Japanese mustard (Brassica campestris subsp. nipposinica), red mustard (Brassica juncea subsp. rugosa), tah tsai (Brassica campestris subsp. narinosa), multiple lettuce (Lactuca sativa) cultivars, spinach (Spinacia oleracea), arugula (Eruca sativa), and Swiss chard (Beta vulgaris subsp. cicla). In 1997 and 1998, severe damping-off disease of Swiss chard was observed in the Salinas Valley (Monterey County). Symptoms on emergent plants consisted of wilting, brown necrosis of crown tissue, and eventual death of seedlings. Because of the high plant density, disease incidence increased rapidly, affecting large numbers of plants. Rhizoctonia solani was isolated consistently from symptomatic plants. Pathogenicity was tested by placing agar plugs of representative isolates adjacent to crowns of potted Swiss chard at the two- to four-leaf stage. Brown stem necrosis and plant collapse occurred within 5 days after inoculation, and R. solani was reisolated. Control plants, inoculated with sterile agar plugs, did not develop disease. Tests were repeated and results were similar. Anastomosis group testing revealed that all five isolates belonged to AG3 (1). For California, this appears to be the first documentation of damping-off of Swiss chard caused by R. solani.

*Reference*: (1) B. Sneh et al. Identification of Rhizoctonia Species. American Phytopathological Society, St. Paul, MN, 1991.

## Disease Notes (continued)

First Report of Alternaria alternata Causing Leaf Spot on English Walnut. A. Belisario, E. Forti, and L. Corazza, Istituto Sperimentale per la Patologia Vegetale, Via C. G. Bertero 22, 00156 Roma, Italy; and H. A. van Kesteren, Plant Protection Service, Geertjesweg 15, NL-6700 HC Wageningen. Plant Dis. 83:696, 1999; published on-line as D-1999-0503-01N, 1999. Accepted for publication 15 April 1999.

A foliar disease of English walnut (Juglans regia L.) was observed in 1998 in an orchard in northern Italy. Symptoms consisted of circular, necrotic spots bordered with concentric zones of darker tissue. Average lesion diameter was 20 mm, although lesions could extend to half of the leaflet lamina. A fungus identified as Alternaria alternata (Fr.:Fr.) Keissl. (1) was observed on the necrotic tissue and was consistently isolated from the margins of the necrosis. Conidia from leaves were brown, ellipsoid to ovoid (primary conidia 28 to  $60 \times 8$  to 15 µm; secondary conidia 10 to  $30 \times 7$  to 13 µm), with walls often ornamented, 1 to 6 transversely septate and 0 to 3 longitudinally septate. For pathogenicity tests, three isolates were grown on potato dextrose agar for 2 weeks. Inoculations were performed on detached, surface-sterilized, healthy J. regia leaflets. Four drops (5  $\mu$ l each) of a sterile water suspension of 1  $\times$  10<sup>5</sup> conidia per ml were placed on each leaflet; three leaves per isolate were used. Leaves were incubated in a moist chamber. After 10 days, leaf spots similar to the original symptoms developed on all the inoculated points for all three isolates, and the pathogen was reisolated. Control leaflets inoculated with sterile, distilled water remained symptomless. The experiment was performed three times and the results were similar. Alternaria alternata is a well-known pathogen on many crops but a few records report this fungus as a causal agent of leaf spot on deciduous trees. This is the first report of A. alternata on English walnut.

Reference: (1) E. G. Simmons. Mycotaxon 37:79, 1990.

First Report of Root Rot of Soybeans Caused by *Corynespora cassiicola* in Wisconsin. S. J. Raffel, E. R. Kazmar, R. Winberg, E. S. Oplinger, J. Handelsman, R. M. Goodman, and C. R. Grau, University of Wisconsin-Madison, Madison 53706. Plant Dis. 83:696, 1999; published on-line as D-1999-0506-03N, 1999. Accepted for publication 3 May 1999.

Corynespora cassiicola (Berk. & M. A. Curtis) C. T. Wei was isolated from diseased soybean plants (Glycine max) collected in two fields near Racine and Arlington, WI. Plants sampled at seedling emergence (VC), late vegetative (V5), and mid-reproductive (R5) stages exhibited reddish to dark brown longitudinal lesions on the exterior of the tap root extending vertically on the hypocotyl to the soil line, and extensive necrosis of lateral roots. Sample size at each growth stage was 144 plants per site. Roots were surface sterilized in 0.5% sodium hypochlorite for 2 min and sections of symptomatic tissue placed on water agar (12 g/liter) containing 100 µg of streptomycin per ml. Sporulation occurred on lesions and on mycelium that had grown out from the plant tissue onto the water agar following a 2-week incubation at 24°C under fluorescent light (280 µmol s<sup>-1</sup> m<sup>-2</sup>). Incidence of isolation of C. cassiicola at both sites was 40% of plants sampled at growth stage VC, 67% at V5, and 78% at R5. Conidia characteristic of C. cassiicola were particularly abundant on the surface of necrotic lateral root tissue. Elongated conidia produced on water agar were 151  $\pm$  5  $\mu m$   $\times$  15  $\pm$  0.5  $\mu m$  with an average of 13  $\pm$  0.4 cells separated by hyaline pseudosepta (1). To confirm pathogenicity, a 1-cm lateral slice into each of four 5-day-old soybean seedling roots was made and a plug of agar taken from the margin of a colony of C. cassiicola grown on potato dextrose agar was placed in each wound and incubated for 14 days at 24°C in a growth chamber. Symptoms similar to those of diseased field plants were observed and C. cassiicola was reisolated from all plants inoculated with C. cassiicola; all controls treated with agar alone had no symptoms and C. cassiicola was recovered from none of the noninoculated controls. This is the first report of root rot caused by C. cassiicola on soybean in Wisconsin.

Reference: (1) W. L. Seaman and R. A. Shoemaker. Can. J. Bot. 43:1461, 1965.

**First Report of Southern Blight Caused by** *Sclerotium rolfsii* **on St.-John's-Wort.** A. P. Keinath, J. W. Rushing, and R. J. Dufault, Clemson University, Coastal Research and Education Center, Charleston, SC 29414-5332. Plant Dis. 83:696, 1999; published on-line as D-1999-0504-01N, 1999. Accepted for publication 3 May 1999.

Interest in commercial production of common St.-John's-wort (Hypericum perforatum L.), an herb that is dried, processed, and used as an anti-depressant medication, is increasing. In August 1998, St.-John'swort growing in the field at Charleston, SC, showed blight symptoms. Leaves on prostrate branches turned reddish-yellow, then brown, and then abscised. As the disease progressed, branches and approximately 10% of the plants were killed. Coarse, white mycelia were present on the bases of dead branches. Segments cut from symptomatic branches were disinfested in 0.5% sodium hypochlorite and placed on potato dextrose agar (PDA) at 25°C. Sclerotium rolfsii Sacc. was isolated from one of 12 branches with discolored leaves and six of six dead branches. For pathogenicity tests, sclerotia were harvested from 6-week-old cultures on PDA. Ten-week-old St.-John's-wort plants, growing in potting mix in 10-cm pots, were inoculated by placing four sclerotia on the soil surface 1 to 1.5 cm from the main stem of each plant. Plants were grown in a greenhouse at 90% relative humidity and 25 to 35°C. Single blighted branches were observed on three plants 12 days after inoculation and all plants were blighted 28 days after inoculation. S. rolfsii was recovered from 10 and 9 of 10 plants inoculated with isolates of S. rolfsii from St.-John's-wort and tomato, respectively. All 10 noninoculated plants remained symptomless. The pathogenicity test was repeated and the results were similar. This is the first report of S. rolfsii causing Southern blight on St.-John's-wort in the United States.

First Report of a *Septoria* sp. on Common Ragweed (*Ambrosia artemisiifolia*) in Europe. Gy. Bohár and I. Schwarczinger, Plant Protection Institute, Hungarian Academy of Sciences, P.O. Box 102, H-1525 Budapest, Hungary. Plant Dis. 83:696, 1999; published on-line as D-1999-0506-01N, 1999. Accepted for publication 4 May 1999.

During a survey for potential biocontrol agents of common ragweed (Ambrosia artemisiifolia var. elatior (L.) Descourt) in 1997, plants exhibiting irregular, brown leaf spots were collected repeatedly from six roadside locations in Pest County, Hungary. Many pycnidia developed in the necrotic tissues on detached leaves after 2 days in moist chambers. Pycnidia were globose to slightly flattened, brown, thin walled, 58 to 100 µm in diameter, with a definite ostiole. Conidia were hyaline, filiform with 2 to 3 septa, and 22.0 to  $38.0 \times 0.7$  to 1.3 µm in size. The fungus was isolated on potato dextrose agar and identified as a Septoria sp. To confirm pathogenicity, potted ragweed seedlings were sprayed with a suspension of  $5 \times 10^6$  conidia per ml from pure cultures of the Septoria sp., placed in a dew chamber for 72 h, and then grown in a greenhouse at 16 to 24°C. After 2 weeks, inoculated plants developed small, brown lesions on leaves and leaf petioles. Three weeks after inoculation, necrotic lesions had enlarged to 1 to 3 mm in diameter with irregular, distinct margins and light brown centers. The lesions on the lower leaves were larger and more numerous than on leaves nearer the tops of the plants. Pycnidia developed on the senescent leaves after 1 month. Infected leaves became completely necrotic and occasionally entire plants died. The pathogen was reisolated from all inoculated plants, thus satisfying Koch's postulates. A voucher specimen was deposited at the Department of Botany of the Hungarian Natural History Museum in Budapest (No. BP 92081). Septoria ambrosiae Hemmi et Naito was described on ragweed in Japan (1), but our isolate is morphologically distinct from that species. This is the first report of a Septoria sp. on A. artemisiifolia in Europe.

Reference: (1) N. Naito. Mem. Coll. Agric. Kyoto 47:41, 1940.