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DISEASE NOTES



First Report of White Mold Caused by *Sclerotinia sclerotiorum* on Watercress (*Nasturtium officinale*) in Italy

A. Garibaldi, D. Bertetti, P. Pensa, S. Matić, and M. L. Gullino

Affiliations ^

Authors and Affiliations

A. Garibaldi

D. Bertetti

P. Pensa

S. Matić, Centre of Competence AGROINNOVA, University of Torino, 10095 Grugliasco, Italy

M. L. Gullino[†], Centre of Competence AGROINNOVA and DISAFA, University of Torino, 10095 Grugliasco, Italy.

Published Online: 25 Oct 2018 | <https://doi.org/10.1094/PDIS-05-18-0778-PDN>

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Watercress (*Nasturtium officinale*), *Brassicaceae* family, is an herbaceous plant belonging to the native Italian flora that is appreciated for its flavor as a green salad. During the spring of 2018, approximately 2% of 480 2-month-old potted plants of *N. officinale* grown in a commercial farm located in Albenga (northern Italy) showed symptoms and signs of white mold. Affected leaves yellowed and became pale brown, and within 2 days of yellowing they wilted and withered. Stems rotted starting from the base. A whitish mycelium producing spheroid, sometimes elongated, 2 to 5 (average, 3) mm ($n = 50$), dark sclerotia covered the affected tissues and the surface of the potted soil. Affected plants died within 7 days of first symptoms. Apothecia, asci, and ascospores were not observed. Small pieces (approximately $2 \times 2 \times 2$ mm) of affected tissue were surface disinfected in a NaOCl solution for 10 s, rinsed with sterilized water and plated on potato dextrose agar (PDA). Plates were incubated at $22 \pm 1^\circ\text{C}$ for 6 days. Isolations consistently yielded white, fluffy, cottony colonies that produced spheroid, dark sclerotia primarily near the edges of plates. Sclerotia were 2 to 8 (average, 3) mm ($n = 50$ from five plates). Based on the morphological features of the isolates, the causal agent was tentatively identified as *Sclerotinia sclerotiorum* (Lib.) De Bary ([Mordue and Holliday](#)

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Article History

Issue Date: 4 Jan 2019

Published: 25 Oct 2018

Accepted: 30 Jul 2018

Pages: 152

Information

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1976). DNA was extracted from a pure culture of a single isolate (DB18APR01) using the E.Z.N.A. Fungal DNA Mini Kit (Omega Bio-Tek, Darmstadt, Germany). A polymerase chain reaction was performed using primers ITS1/ITS4 (White et al. 1990) to amplify the internal transcribed spacer (ITS) region of the rDNA. NCBI BLAST analysis of the 514-bp sequence (GenBank accession no. MH327997) showed 100% identity with the sequence KX184720 of *S. sclerotiorum*. In the pathogenicity test, a steamed substrate was artificially inoculated (3 g/liter) with wheat kernels colonized by mycelium and sclerotia of *S. sclerotiorum* isolate DB18APR01. Fifteen 20-day-old plants of *N. officinale* were transplanted into the artificially inoculated soil, whereas 20 control plants were transplanted into soil infested with sterilized noninoculated kernels. All plants were kept in a humid chamber at $23 \pm 1^\circ\text{C}$. Five days later, all inoculated plants showed first symptoms of basal stem rot and wilted, and a white mycelium developed on affected tissues. A fungus characterized by whitish mycelium with spheroid or elongated, dark sclerotia, identical to *S. sclerotiorum*, was reisolated from 100% of the plants. Control plants remained asymptomatic. *S. sclerotiorum* has been reported on *N. officinalis* in the United States (Farr et al. 1989). To our knowledge, this is the first report of *S. sclerotiorum* on *N. officinalis* in Italy and in Europe. The economic importance of the disease detected on *N. officinalis* is at present limited, but it could spread owing to the increasing use of this species for culinary uses, causing severe losses to the local production made up of several minor crops.



**The American Phytopathological Society
(APS)**

📍 3340 Pilot Knob Road, St. Paul, MN 55121 USA

☎ +1.651.454.7250

FAX +1.651.454.0766

