New Disease Reports

First report of *Itersonilia perplexans* on *Heracleum sosnowskyi* in Russia

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Sosnowsky's hogweed (*Heracleum sosnowskyi*; Apiaceae) is cultivated as a forage plant. However, in some regions it appears as a weed dangerous for human health. Over the period July-August 2008, individual *H. sosnowskyi* plants with vigorous blight symptoms (Fig. 1) were observed in two places (35 km apart) in the Leningrad region of northwestern Russia. Diseased plants had brown or orange-brown spots on leaves (Fig. 2). On some leaves the spots coalesced to form large necrotic areas in the leaf centre or on the margin.

The pathogen was isolated by fixing sections of surface-sterilised diseased leaves onto petri dish lids with Vaseline® over potato sucrose agar (PSA). After two week's incubation on PSA at 24°C, colonies that were pale cream in colour and velvety with feathery margins reached 27.2 mm in diameter. Mycelium was hyaline with clamp connections at the septa. Swelling sporogenous cells were intercalary or terminal, pyriform, ovoid to subglobose. Sporogenous cells germinated with hyphae or sterigmata, on which ballistospores formed. Ballistospores were hyaline, broadly-lunate to pyriform, (11-)16.6(-22) x (8-)12.2(-18.5) µm (Fig. 3). Globose chlamydospores were solitary or in clusters, 8.9-11.7 µm in size. Based upon these morphological characteristics, the fungus was identified as *Itersonilia perplexans*. This identification was confirmed by comparison of internal transcribed spacer (ITS) sequence data with GenBank data. The ITS1-5.8S-ITS2 region of rDNA was amplified by polymerase chain reaction (PCR) and sequenced. BLAST analysis revealed the highest identity of our 595 bp sequence (GenBank Accession No. KF780585) with that of *I. perplexans* ex-type strain CBS 363.85 (NR077117). The only difference between the sequences was a substitution at one site.

Pathogenicity of the fungus was confirmed by inoculating leaf discs and whole plants. The fungus was cultivated on PSA for two weeks. Ballistospores were collected by rinsing the agar culture with 5 ml of sterile water with 0.01% Tween-60. Drops (10 µl) of the suspension (1x10ballistospores/ml) were put on 12 leaf discs placed in petri dishes on wet filter paper (Fig. 4). Six whole plants were inoculated by spraying the suspension (1x10^6 ballistospores/ml) of the fungus until run-off. Control plants were sprayed with water only. All plants were incubated for 48 hours at 100% humidity at 22-24°C and then kept on a laboratory bench. Symptoms appeared three days after inoculation on the inoculated plants, whereas the control plants remained symptomless. After seven days, the average percentage of the necrotic area was 65%. The pathogen was re-isolated as described above confirming Koch's postulates. *I. perplexans* is reported to cause flower blight and other symptoms on some other species in the Asteraceae and Apiaceae, recorded in European and Asian countries, North America, Australia and New Zealand (Channon, 1963; Boekhout *et al*., 1991; Seijo *et al*., 2000; Koike & Tjosvold, 2001; McGovern *et al*., 2006; Rodeva *et al*., 2009). This is the first report of *I. perplexans* on *H. sosnowskyi* in Russia. This fungus has potential as a biocontrol agent for this noxious weed.

Acknowledgements

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Figure 1

Figure 2

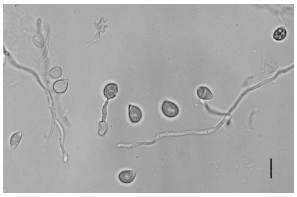

Figure 3

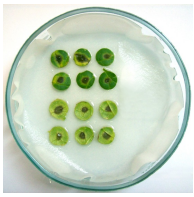

Figure 4

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