SHORT COMMUNICATION

Cryptocline taxicola (All.) Petr. – A New Plant Pathogen Reported in Slovak Republic

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Abstract

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Symptoms of fungal infection were observed on a plant of *Taxus baccata* in an urban park. Diagnosis of the pathogen showed the presence of the fungus *Cryptocline taxicola*. This is the first report of this fungus in Slovak Republic. Characteristics of visual symptoms and microscopic features are described.

Keywords: *Taxus baccata*; *Cryptocline taxicola*; stereomicroscopy, microscopy; culture

In contrast to other European tree species, English yew has a conspicuously low affinity for fungi (Schütt *et al.* 1994). However, several authors reported infection of *Taxus* by a few species of fungi (Brandenburger 1985; Schütt *et al*. 1994; Ellis & Ellis 1997; Thomas & Polwart 2003).

One of the reported fungi is *Cryptocline taxicola* (All.) Petr., which is known to occur on needles of *Taxus baccata* L. in Europe and North America (Morgan-Jones 1973). According to Wulf and Pehl (2002), the first disease symptoms on an infected tree consist of single necrotic spots mainly on the current year's needles, although not all needles are damaged to the same extent. However, as the disease progresses, the affected shoots turn completely brown and both the upper- and underside of the needles are covered by numerous black fruiting bodies of the fungus. In the presence of sufficient moisture, the conidia of the fungus become visible as white to cream-coloured pustules on the ripe acervuli that rupture the epidermis. During dry conditions, the fruiting bodies have a black and shrunken appearance.

MATERIALS AND METHODS

In the season of 2006, damaged twigs of *Taxus baccata* were delivered to the laboratory of the Department of General and Quarantine Diagnostics, Central Control and Testing Institute of Agriculture in Bratislava. The plant material had been taken by the phytoinspector from an infected tree in a park at Turčianska Štiavnička. At first, damage on the sample was suspected to

Figure 1. Mature acervuli of *Cryptocline taxicola* on needle of *Taxus baccata*

be caused by *Phytophthora ramorum* (Werres et al.), but no *Phytophthora* spp. was present on the sample, which was confirmed by the negative isolation on P_5ARP[H] medium. However, necrotic and chlorotic needles were observed with fruiting bodies on the upper and lower surfaces, which led to the diagnosis of pathogen. Investigation of visual symptoms and fruiting bodies was carried out by stereomicroscope, investigation of fungal structures by microscope using 40–600× magnification. Culture in a wet chamber and isolation on malt extract agar (MEA) and potato dextrose agar (PDA) at 22°C followed.

RESULTS AND DISCUSSION

Under the stereomicroscope the acervuli of the fungus were circular to subcircular, black, surrounded by brown circles and 150–350 µm in diameter. The epidermis of the needle was first pushed upwards and then ruptured irregularly when the fruiting bodies became ripe and broke through. After culture in a wet chamber, a creamy coloured spore mass oozed out from the acervuli (Figure 1) and ellipsoid to oval, smooth-walled and hyaline conidia were produced, measuring 15.6 × 6.85 µm on average (Figure 2). Mature conidia were

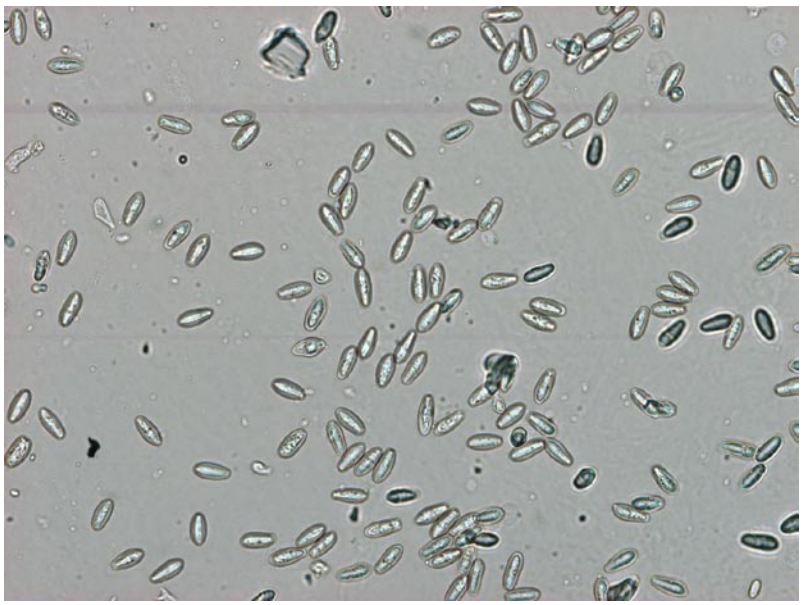

Figure 2. Conidia of the fungus *Cryptocline taxicola*

truncate at the base, obtuse at the apex, hyaline to slightly pigmented. Conidiophores were hyaline, phialidic, cylindrical, measuring 15 × 3.5 µm on average. On culture media, the fungus formed a felty to woolly, olive to grey-brown aerial and slow-growing mycelium. These characteristics led to determination of the fungus as *Cryptocline taxicola* (All.) Petr. (Petrak 1925).

The particular twigs of *Taxus* were infected also by another fungus that was identified as *Phyllosticta concentrica* Sacc.; it had pycnidia 100–250 µm in size and egg-shaped hyaline conidia measuring 16.27 × 9.74 µm on average, with an appendage up to 35 µm.

The fungus *Cryptocline taxicola* is known to occur on needles of *Taxus baccata* in Europe, but to my knowledge this is the first report on the occurrence of this fungus on *Taxus baccata* in Slovak Republic.

Among the needle diseases, *Cryptocline taxicola* was judged to be of low importance. Recent observations show that it obviously possesses a large degree of parasitic ability (Wulf & Pehl 2002). To know details of the occurrence of this fungus in Slovak Republic, a survey would have to be conducted. However, for the time being this report confirmed the presence of the pathogen in this country.

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