



Leaf spot disease of lowbush blueberry (*Vaccinium angustifolium*) caused by *Pestalotiopsis photiniae* newly reported in China

C.Q. Chen, B. Zhang and J. Gao*

Laboratory of Plant Pathology, Department of Agronomy, Jilin Agricultural University, Changchun 130118, China

*E-mail: jiegao115@126.com

Received: 25 Mar 2010. Published: 03 Dec 2010. Keywords: fungal plant disease, etiology

Blueberry (*Vaccinium* spp.) production in northeast China has grown remarkably in the last twenty years due to its highly nutritional and economic value. As blueberry acreage increases, the diversity of diseases and challenges for control are gaining more attention. In August 2009, unusual leaf spots were observed on one-year-old potted lowbush blueberry (*V. angustifolium*) in the blueberry testing grounds of Jilin Agricultural University in Changchun city, China. Disease incidence ranged from 40% to 100% in some poorly-ventilated areas of the nursery garden. The infection began as small brown dots on the leaves. These dots enlarged to a diameter of 3-4 mm and progressed to form deep brown, circular, elliptical or irregular spots with a dark red halo around the margin (Fig. 1). In a humid environment, black, sessile and discoid conidiomata developed on the spots and exuded a pink spore mass that turned brown with age. Leaves eventually dropped off with the disease.

Infected leaves were surface-sterilized and plated onto potato dextrose agar (PDA). The plates were incubated at 25°C for 5-10 days. The fungal colonies on PDA showed white mycelia covered with black globular acervuli. Microscopic observation revealed typical conidia of *Pestalotiopsis* sp. These were five-celled mature conidia (three darker median and two hyaline end cells) with dimensions 21.0-26.0 x 6.5-7.8 µm, with two to four (mostly three) apical appendages 21-32 µm long, and one basal appendage 3.5-5.8 µm long. Based on these morphological characteristics, the fungus was identified as *Pestalotiopsis photiniae* (Guba EF, 1961). Pathogenicity was tested by spraying a suspension of conidia (1×10^5 conidia/ml) on the leaves of healthy blueberry plants, distilled water serving as control. After 7-10 days, the symptoms described above were observed on the leaves of all the inoculated plants, whereas these symptoms did not develop on the control plants. The same fungus was re-isolated from diseased leaves, confirming Koch's postulates. The ITS

sequence (GenBank Accession No. GU395992) obtained from this strain (Pp.jlnd09) was 99% identical to that of *P. photiniae* KUC5019 (GenBank Accession No. GQ241287). The morphological and molecular data corresponded to those of *P. photiniae*. Although a leaf spot disease caused by *P. clavisporea* in China was reported in 2008 (Luan *et al.*, 2008), the pathogens and symptoms of these two leaf spot diseases on blueberry are different according to a comparison of the present study with that of Luan *et al.* (2008). Firstly, the species on which leaf spot disease was observed in our study was lowbush blueberry (*V. angustifolium*); in Luan *et al.* (2008) it was half-high blueberry (*V. corymbosum*). Secondly, the size of leaf spots (3-4 mm) observed in our study was smaller than those (4-8 mm) reported earlier and we also observed a clear dark red halo around the margin of lesions, not previously reported (Luan *et al.*, 2008). Thirdly, there were differences in the characteristics of the mature conidia between the two *Pestalotiopsis* species, including colour, number and size of conidial cells and appendages. Therefore, to the best of our knowledge, this is the first report of leaf spot disease in blueberry caused by *P. photiniae* in China.

References

- Guba EF, 1961. Monograph of *Monochaetia* and *Pestalotia*. Cambridge, MA, USA: Harvard University Press.
- Luan YS, Shang ZT, Su Q, Feng L, An LJ, 2008. First Report of a *Pestalotiopsis* sp. causing leaf spot of blueberry in China. *Plant Disease* **92**, 171. [doi:10.1094/PDIS-92-1-0171A]



Figure 1

To cite this report: Chen CQ, Zhang B, Gao J, 2010. Leaf spot disease of lowbush blueberry (*Vaccinium angustifolium*) caused by *Pestalotiopsis photiniae* newly reported in China. *New Disease Reports* **22**, 31. [doi:10.5197/j.2044-0588.2010.022.031]

©2010 The Authors

This report was published on-line at www.ndrs.org.uk where high quality versions of the figures can be found.