plant disease

# First report of Cylindrocladium pseudonaviculatum causing leaf spot of Pachysandra terminalis



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**First report of *Cylindrocladium pseudonaviculatum* causing leaf spot of *Pachysandra terminalis*.** J. A. LaMondia, D. W. Li, R. E. Marra, and S. M. Douglas. The Connecticut Agricultural Experiment Station, Windsor, CT 06095, and New Haven, CT 06504.

*Cylindrocladium pseudonaviculatum* Crous, J.Z., Groenew. & C.F. Hill 2002 was recently reported infecting common boxwood *Buxus sempervirens* L. in Connecticut (1). We isolated the pathogen from lesions on leaves and stems of *B. sempervirens* and obtained single-spored cultures on water agar or half-strength potato dextrose agar (½PDA). The pathogen was identified as *C. pseudonaviculatum* by morphological characteristics (2). Colony size reached 71 mm diameter after 14 days at room temperature on ½ PDA, fluffy with white aerial hyphae, mars brown, reverse color chestnut brown at the center fading to pale brown, forming concentric bands. Macroconidiophores solitary or in a group of up to 3, comprised of a stipe, a sterile elongation and 1–3 penicillate fertile branches. Stipe up to 9 septate, 90–250 µm in length, colorless, smooth, terminating in a naviculate or broadly ellipsoidal vesicle with a pointed or papillate apex, 27–50 × 6.5–9 µm. Primary branches 0–1 septate, 20–36 × 4–5 µm, secondary branches aseptate 11–20 × 3–4.5 µm, tertiary branches rare, each terminal branch producing 2–5 phialides; phialides doliiform or reniform, colorless, (10.8-)12–18(-21.4) µm. Conidia cylindrical, rounded at both ends, straight, smooth, colorless, 2 celled, (47-)48–55(-61) × (4.5-)4.5–5.5(-6) µm, in colorless slimy cylindrical clusters. Microconidiophores not observed. Chlamydospores golden to dark brown, thick-walled, smooth or rough. Microsclerotia were present on ½ PDA. A portion of the β-tubulin 2 gene used in a BLAST search against all available *Cylindrocladium/Calonectria* species available in GenBank showed 100% homology with only *C. pseudonaviculatum*, confirming the species determination. Healthy plants of

Japanese spurge, *Pachysandra terminalis*, with three plants per 10-cm-diameter pot, were inoculated with water alone or a conidial suspension of *C. pseudonaviculatum* isolate L1 (ATCC ###) ($1.0 \times 10^6$ conidia per plant) using a hand-held sprayer until runoff. Plants were kept moist in a plastic bag for 48 hours at ambient laboratory temperature and then transferred to a greenhouse bench. Lesions were evident on leaves ten days after inoculation. All twelve inoculated plants developed lesions, and no lesions were observed on plants sprayed with water alone. Leaves with lesions were surface sterilized in 0.5% NaOCl for 30 seconds, rinsed twice in sterile distilled water and plated onto water agar or ½ PDA. The pathogen was re-isolated into pure culture. Koch's postulates were performed twice. Three weeks after inoculation, many of the leaves with lesions yellowed and dropped to the soil surface and heavy sporulation of *C. pseudonaviculatum* was observed. This is the first report of *C. pseudonaviculatum* causing a leaf spot disease on *Pachysandra terminalis*. Pachysandra is a widely grown ground cover suitable for shady, humid environmental conditions that may be conducive for the development of disease.



*References*: (1) S. M. Douglas et al. Plant Disease. 96: XXX, 201x (2) P. Crous, et al. Sydowia 54:23, 2002.