New Disease Reports

WILEY

NEW DISEASE REPORT OPEN ACCESS

First Report of *Pestalotiopsis biciliata* Causing Leaf Tip Necrosis of *Aloe vera* in Sri Lanka

T. Kathurjan | C. J. Emmanuel

Department of Botany, Faculty of Science, University of Jaffna, Jaffna, Sri Lanka

Correspondence: C. J. Emmanuel (jeyaseelan.ec@univ.jfn.ac.lk)

Received: 13 December 2025 | **Accepted:** 20 January 2026

Keywords: fungal plant disease | leaf loss | Sporocadaceae

Between late 2022 and early 2023, *Aloe vera* plants in three cultivated sites in the Achchuveli region of Jaffna, Sri Lanka, showed widespread tip necrosis, with a disease incidence of 80%. Symptoms included necrotic lesions at leaf tips, bordered by a chlorotic zone separating healthy tissue. The lesions extended downwards, causing leaf yellowing, reduced succulence and



FIGURE 1 | Tip necrosis symptoms observed on leaves of *Aloe vera*: (a) necrosis initiating at the leaf tip, (b) necrosis advancing down the leaf with a chlorotic margin separating healthy and diseased tissue, (c) tip necrosis present on all leaves of an affected plant and (d) leaf deterioration and loss at a later stage of the disease.

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2026 The Author(s). *New Disease Reports* published by British Society for Plant Pathology and John Wiley & Sons.

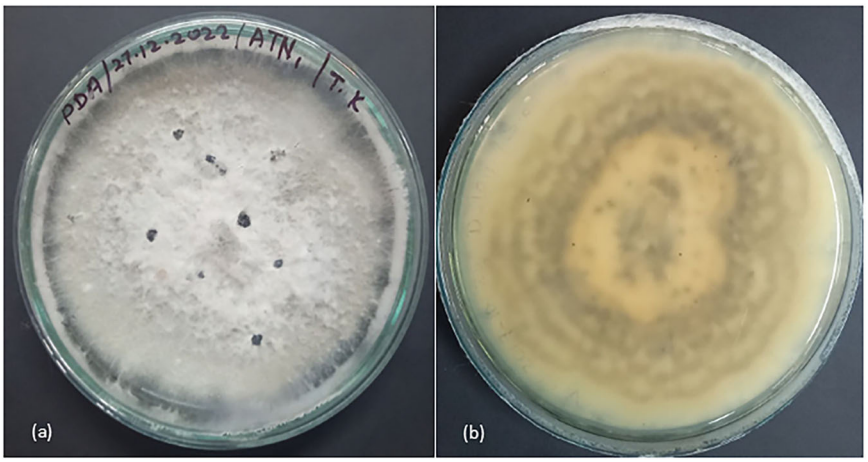


FIGURE 2 | Colony morphology of a 28-day-old culture of *Pestalotiopsis biciliata* grown on potato dextrose agar: (a) upper and (b) lower surface.

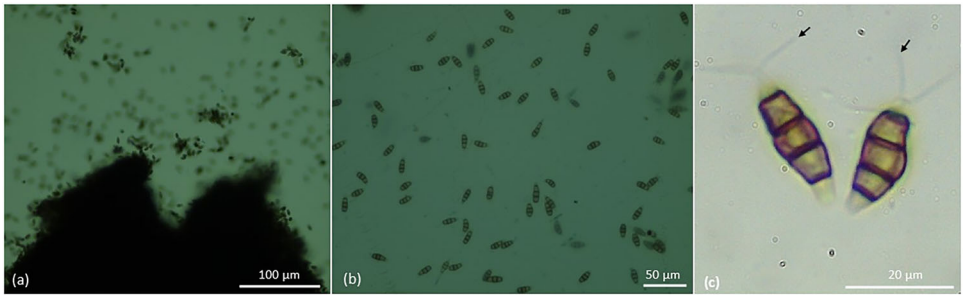


FIGURE 3 | Microscopic characteristics of *Pestalotiopsis biciliata*: (a) conidiomata and (b, c) conidia bearing hyaline basal cells, apical cells with 2–3 appendages (indicated by arrows), and yellowish-brown median cells.

eventual leaf loss (Figure 1). Affected plants also exhibited stunted growth compared to healthy ones.

Pure cultures were obtained by isolating fungi from 18 diseased leaves on potato dextrose agar and subculturing on the same medium. Isolates produced slow-growing, cottony colonies with aerial mycelium, creamy yellow undersides with grey concentric rings and developed black pycnidial conidiomata (Figure 2). Conidia were fusiform to ellipsoidal (24.53 ± 1.18 µm × 7.69 ± 0.00 µm, $n = 30$), 4-septate, with thick-walled, cylindrical, yellow-brown median cells; triangular apical cells with 2–3 appendages; and hyaline, truncate basal cells (Figure 3). Based on these morphological features, the isolates were identified as *Pestalotiopsis* sp., consistent with descriptions by Maharachchikumbura et al. (2011).

Total DNA was extracted from representative isolates ATN1, ATN3 and ATN4. The ITS region and partial regions of translation elongation factor 1-α (TEF1) and β-tubulin (TUB2) genes were PCR-amplified and sequenced, and sequences were submitted to GenBank (Accession Nos. for ITS: PP464154, PV799931, PV799932; TEF1: PX692865, PX692866, PX692867; and TUB2: PX692862, PX692863, PX692864, for ATN1, ATN3 and ATN4, respectively). Multi-locus phylogenetic analysis using Maximum Likelihood and Bayesian Inference methods grouped all three isolates in a single clade with *P. biciliata* strain CBS 124463, supported by 87% bootstrap value and a posterior probability of 0.97, confirming their identification as the *P. biciliata* (Figure 4).

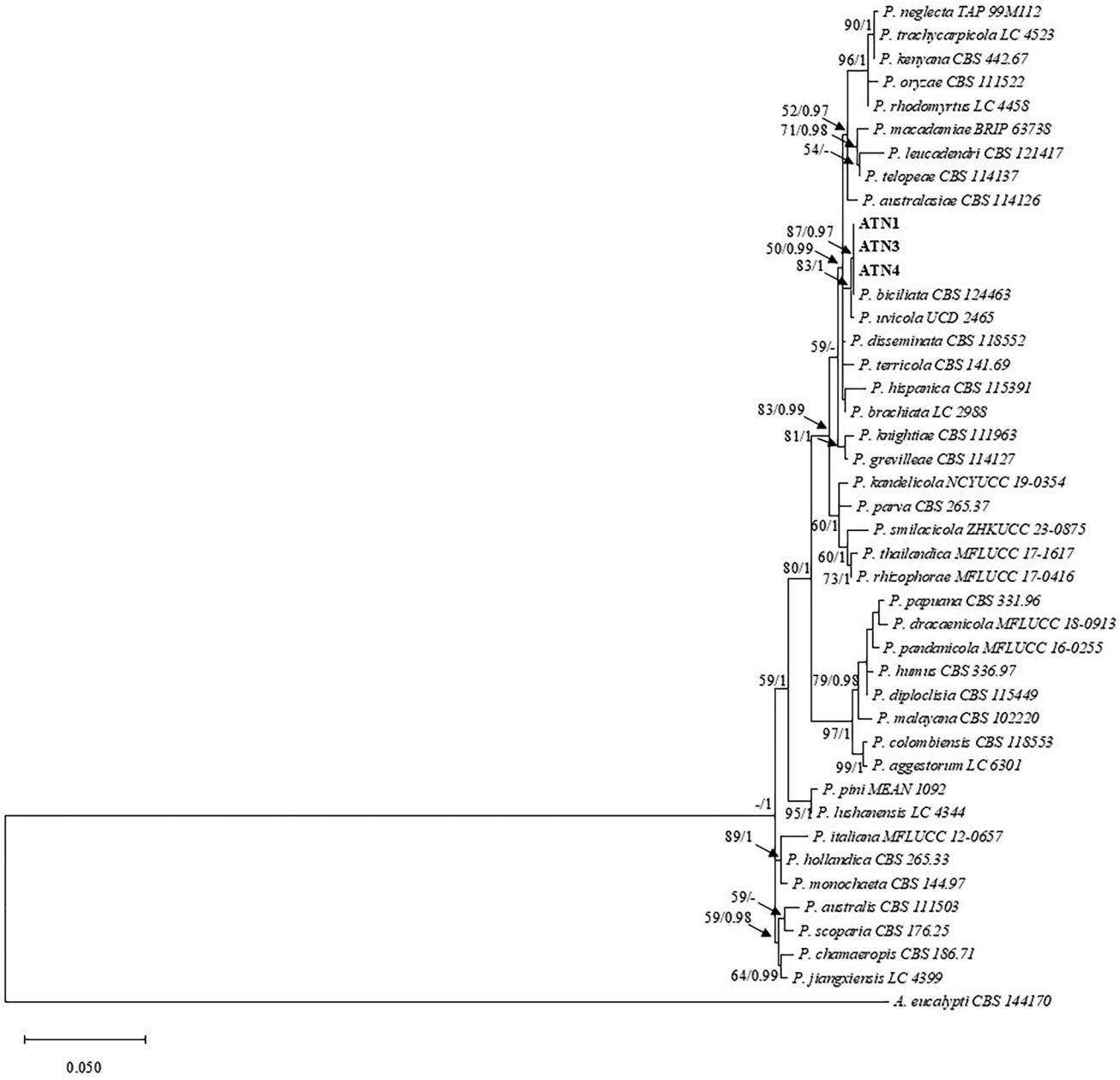


FIGURE 4 | Multi-locus phylogenetic tree based on combined ITS, TEF1, and TUB2 sequences of *Pestalotiopsis* isolates obtained in this study, along with reference strains, constructed using Maximum Likelihood and Bayesian inference methods. Bootstrap support values ≥ 50% and posterior probabilities (PP) ≥ 0.90 are indicated at the nodes and branches. *Allelochaeta eucalypti* CBS 144170 was used as the outgroup. Taxon names in bold represent isolates obtained in the present study.

To confirm pathogenicity, six surface-disinfected leaf tips were sprayed with 1 mL of conidial suspension (1×10^5 conidia/mL), while controls received sterile distilled water. Leaves were incubated at 27°C ± 2°C with a 16-h photoperiod. The test was repeated three times. Symptoms appeared within 4 days as brown necrotic patches at leaf tips, later expanding, merging and causing chlorosis, leaf margin rolling and reduced succulence. Fungi re-isolated from symptomatic leaves matched the original isolates, while controls showed no symptoms (Figure 5).

P. biciliata has been reported on *Eucalyptus* spp. (Morales-Rodríguez et al. 2019) and *Pinus pinea* (Hlaiem et al. 2022), while *Pseudopestalotiopsis theae* was linked to *A. vera* leaf spot in Bangladesh (Ahmmed et al. 2022). In Sri Lanka, *Lasiodiplodia* species and *Nigrospora sphaerica* have been reported to cause diseases in *A. vera* (Thangarajah and Emmanuel 2024; Kathurjan and Emmanuel 2025). However, this is the first report of *P. biciliata* causing tip necrosis in *A. vera* and its first record in Sri Lanka.

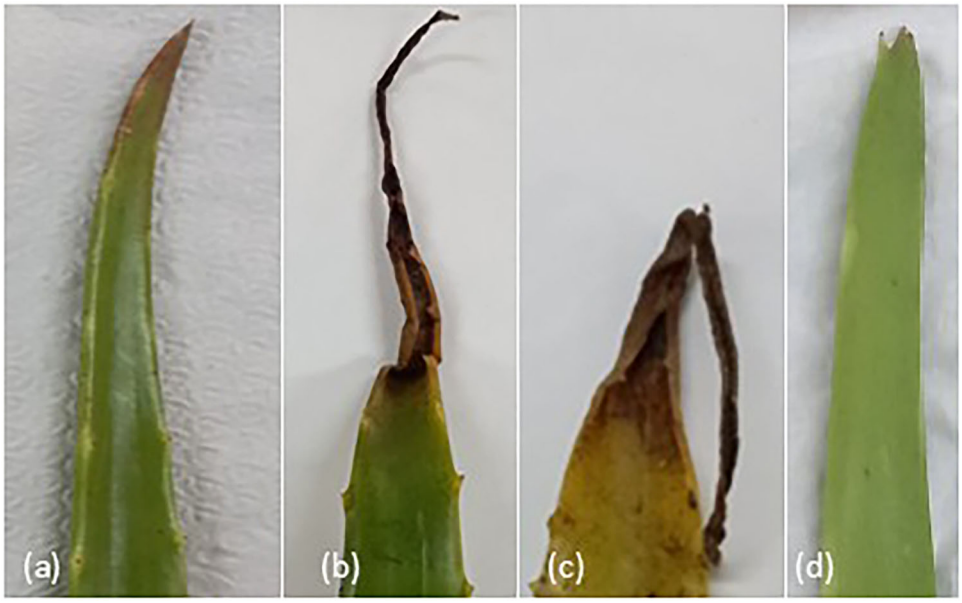


FIGURE 5 | Confirmation of pathogenicity for *Pestalotiopsis biciliata*: (a) necrosis appearing at the leaf tip four days post-inoculation, (b) expansion of the necrotic lesion down the leaf with a chlorotic border between healthy and diseased regions, (c) yellowing of the leaf and (d) absence of symptoms in the control.

Acknowledgements

The work was supported by funds obtained from the University Research Grant (URG/2019/SEIT/24), University of Jaffna, Sri Lanka.

References

Ahmmed, M. S., M. M. Sikder, S. R. Sarker, M. S. Hossain, R. D. Shubhra, and N. Alam. 2022. "First Report of *Pseudopestalotiopsis theae* Causing *Aloe vera* Leaf Spot Disease in Bangladesh." *American Journal of Plant Sciences* 13: 193–204. https://doi.org/10.4236/ajps.2022.132012.

Hlaiem, S., I. Yangui, G. D. Rocca, S. Barberini, R. Danti, and M. L. B. Jamâa. 2022. "First Report of *Pestalotiopsis biciliata* Associated With Twig Canker and Dieback of *Pinus pinea* in Tunisia." *Journal of Plant Pathology* 104: 393–394. https://doi.org/10.1007/s42161-021-00956-5.

Kathurjan, T., and C. J. Emmanuel. 2025. "First Report of *Nigrospora sphaerica* Causing Leaf Spot Disease of *Aloe vera* in Sri Lanka." *New Disease Reports* 52: e70085. https://doi.org/10.1002/ndr2.70085.

Maharachchikumbura, S. S. N., L. D. Guo, E. Chukeatirote, A. H. Bahkali, and K. D. Hyde. 2011. "*Pestalotiopsis*-Morphology, Phylogeny, Biochemistry and Diversity." *Fungal Diversity* 50: 167–187. https://doi.org/10.1007/s13225-011-0125-x.

Morales-Rodríguez, C., M. D. Valle, M. Aleandri, and A. Vannini. 2019. "*Pestalotiopsis biciliata*, a New Leaf Pathogen of *Eucalyptus* spp. Recorded in Italy." *Forest Pathology* 49, no. 2: e12492. https://doi.org/10.1111/efp.12492.

Thangarajah, K., and C. J. Emmanuel. 2024. "Identification of New Phylogenetic Lineage of *Lasiodiplodia* Causing Leaf Spot and Tip Necrosis Causing Agent on *Aloe vera* in Sri Lanka and Screening Eco-Friendly Control Measures." *Physiological and Molecular Plant Pathology* 133: e102387. https://doi.org/10.1016/j.pmpp.2024.102387.