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First Report of Thread Blight Disease Caused by *Ceratobasidium niltonsouzanum* on *Coffea arabica* in Peru

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Thread blight of coffee is commonly attributed to *Corticium koleroga*. However, similar symptoms can also be caused by *Ceratobasidium* spp. and *Marasmius* spp. (de Melo et al. 2018; Lima et al. 2019; Huamán-Pilco et al. 2021). We report *Ceratobasidium niltonsouzanum* on coffee in Peru, suggesting that "thread blight" symptoms may have different aetiologies and warrant local surveys. In early 2024, symptoms of thread blight disease were observed on coffee plants (*Coffea arabica* cv. Catimor) in commercial plantations in Rodríguez de Mendoza, Amazonas, Peru (6.56°S, 77.22°W; 1573 m above sea level). Affected plants exhibited necrotic foliar lesions and white, thread-like fungal structures connecting the leaves and branches (Figure 1).

Diseased tissues were surface-sterilized and plated on potato dextrose agar (PDA), from which four isolates (ECA-100, ECA-113, ECA-115, ECA-116) were purified using the single-hyphal tip technique (Huamán-Pilco et al. 2023). Colonies were initially white and cottony, becoming cream to light brown with age (Figure 2). Microscopic examination of the microcultures showed hyaline, septate hyphae exhibiting right-angle branching, characteristic of *Ceratobasidium* species. However, no basidia formation was detected (Figure 3). Genomic DNA was extracted from PDA-grown mycelium and hyphal threads using a Wizard DNA kit (Promega, USA), and the ITS region (ITS1–5.8S–ITS2) was amplified using primers ITS1F/ITS4. Sequencing (Macrogen, South Korea) and BLASTn analysis of the ITS sequences revealed 99.5%–99.7% identity with *Ceratobasidium niltonsouzanum* sequences from Brazil (Figure 4) (de Melo et al. 2018), identifying the isolates to species. Sequences were deposited in GenBank under Accession Nos. PV544844, PV544845, PV544846 and PX271061.



FIGURE 1 | Symptoms of thread blight disease observed on coffee plants in commercial plantations in Rodríguez de Mendoza, Amazonas, Peru.

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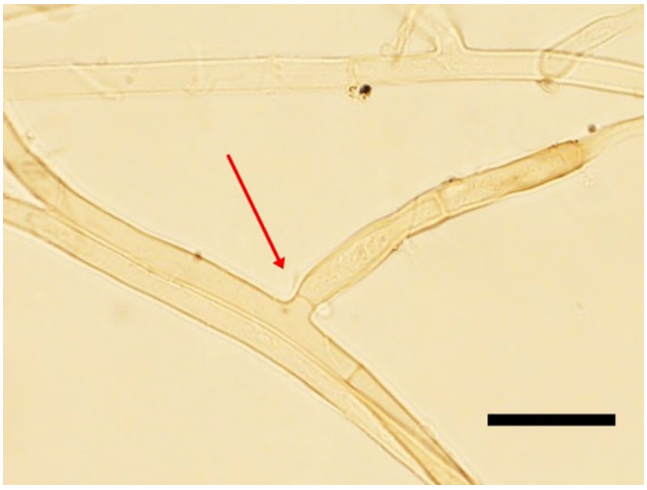


FIGURE 2 | Colony of *Ceratobasidium niltonsouzanum* on potato dextrose agar medium showing the obverse and reverse of the plate.



FIGURE 3 | Characteristic hyphal structure of *Ceratobasidium niltonsouzanum* showing right-angle branching.

Pathogenicity was confirmed by inoculating four healthy coffee plants with 7-day-old PDA cultures using sterile toothpicks colonised by the fungus; control plants received sterile toothpicks. Fifteen days post-inoculation, inoculated plants developed

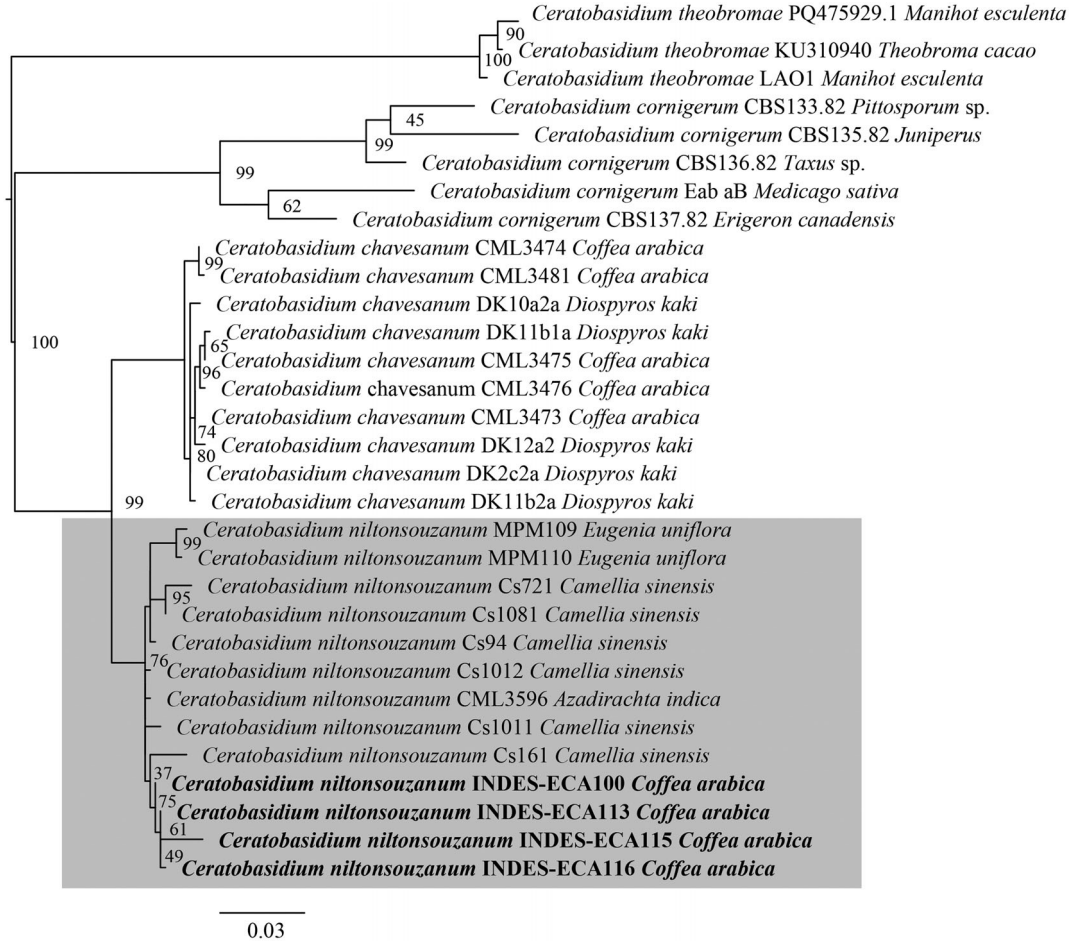


FIGURE 4 | Mid-point rooted maximum likelihood phylogenetic tree constructed from a concatenated dataset of partial sequences of internal transcribed spacers 1 and 2 of *Ceratobasidium niltonsouzanum* isolates obtained from diseased coffee plants in the Amazonas region, Peru (shown in bold). Reference sequences from *Ceratobasidium* species reported by de Melo et al. (2018) were included.



FIGURE 5 | Pathogenicity test showing symptoms caused by inoculation with *Ceratobasidium niltonsouzanum* 15 days after inoculation.

necrotic foliar lesions with thread blight symptoms, while control plants remained symptomless. *Ceratobasidium niltonsouzanum* was re-isolated from symptomatic tissues, fulfilling Koch's postulates (Figure 5).

Ceratobasidium niltonsouzanum has been reported previously on various tropical crops in Brazil and yerba mate (*Ilex paraguariensis*) Argentina (de Melo et al. 2018; Lima et al. 2019), but not on coffee in Peru. To our knowledge, this is the first record of *Ceratobasidium niltonsouzanum* causing thread blight on *Coffea arabica* in Peru. Our findings highlight the need for local surveys also considering the as yet unreported but globally widespread *Corticium koleroga* to clarify aetiology and guide epidemiology and management.

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Conflicts of Interest

The authors declare no conflicts of interest.

References

de Melo, M. P., K. S. Matos, S. I. Moreira, et al. 2018. "Two New *Ceratobasidium* Species Causing White Thread Blight on Tropical Plants in Brazil." *Tropical Plant Pathology* 43: 559–571. https://doi.org/10.1007/s40858-018-0237-x.

Huamán-Pilco, A. F., M. Torres-de la Cruz, M. C. Aime, S. T. Leiva-Espinoza, S. M. Oliva-Cruz, and J. R. Díaz-Valderrama. 2023. "First Report of Thread Blight Caused by *Marasmius tenuissimus* on Cacao (*Theobroma cacao)* in Peru." *Plant Disease* 107: 219. https://doi.org/10.1094/PDIS-02-22-0420-PDN.

Huamán-Pilco, A. F., M. Torres-de la Cruz, G. Ramírez-Ramírez, S. T. Leiva-Espinoza, T. Sanchez-Santillán, and S. M. Oliva-Cruz. 2021. "Caracterización morfológica de hongos asociados al agroecosistema café (*Coffea arabica* L.), en el Estado de Tabasco, México." *Revista Científica Pakamuros* 9: 44–58. https://doi.org/10.37787/0w4g7c02.

Lima, N. B., M. A. Kryvenki, C. Conforto, et al. 2019. "First Report of White Thread Blight Caused by *Ceratobasidium Niltonsouzanum* on Yerba Mate in Argentina." *Plant Disease* 104: 572. https://doi.org/10.1094/PDIS-08-19-1603-PDN.