



# First report of *Penicillium costaricense* Visagie, M. Urb & Seifert (Eurotiales, Ascomycota) in South America and a second report for the world

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## Abstract

*Penicillium* Link is a cosmopolitan group of fungi able to colonize various substrates and habitats. Like other fungi, atmospheric air is one of the most common ways for dispersion. *Penicillium* species in indoor hospital air are an important risk for patients whom may develop infections. We isolated *Penicillium costaricense* Visagie, M. Urb & Seifert in air samples from a surgery center in a public hospital in Brazil. The isolate was identified by morphology together with the  $\beta$ -tubulin and calmodulin molecular markers. The only published data on the occurrence of this species is from the intestine of the caterpillar of *Rothschildia lebeau* (Guérin-Méneville, 1868) in Costa Rica. This report is a warning call to understand the pathogenicity of this species. To the best of our knowledge, this is the first report of *P. costaricense* in South American and only the second report in the world.

## Keywords

Airborne fungi, Eurotiomycetes, indoor fungi, taxonomy

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## Introduction

*Penicillium* Link is a generalist and cosmopolitan group of fungi which belongs to Ascomycetes and classified in the order Eurotiales, family Aspergillaceae (Visagie et al. 2020). Visagie et al. (2014) accepted 354 species, yet this number is rapidly increasing with the description of new species from several substrates and habitats (e.g. Houbraken et al. 2016a; Barbosa et al. 2018; Diao et al. 2018; George et al. 2019; Gonçalves et al. 2019; Visagie et al. 2020). Species of *Penicillium* are commonly found in

soil, decaying organic materials, animal feed, and stored grains, as well as indoors (Cruz et al. 2013; Barbosa et al. 2016, 2018; Houbraken et al. 2016b; Yadav et al. 2018).

The typical morphological feature of *Penicillium* species is their dense, brush-like, spore-bearing structures called penicilli. The conidiophores are simple or branched and are terminated by clusters of flask-shaped phialides. The asexual spores (conidia) are produced in chains from the tips of the phialides, with the youngest spore at the base of the chain, and are nearly always green (Raper and Thom 1949; Onions and Brady 1987;