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RESEARCH ARTICLE

FIRST REPORT OF LEAF BLIGHT OF MONEY PLANT CAUSED BY *Alternaria alternata* (Fr.) Keissler

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ABSTRACT

A severe outbreak of leaf blight was observed in money plant (*Scindapsus aureus*) for the first time in Andhra Pradesh state of India during 2009-2010. Based on pathogenicity, morphology and rDNA spacer sequences, the pathogen was identified as *Alternaria alternata* (Fr.) Keissler. This report is the first of *Alternaria* leaf blight of money plant.

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INTRODUCTION

Money plant (*Scindapsus aureus*) is one of the most commonly used as indoor plants in India. It is a perennial plant of the Araceae, native to Southeastern Asia (Malaysia, Indonesia) and New Guinea. *Epipremnum aureum* is also used as scientific name of the money plant by many and considered synonym of *Scindapsus aureus*. Besides money plant, other names used commonly for this plant are Pothos, Silver Vine, Devil's Ivy and Solomon Island's Ivy. It is a decorative climber and can be easily grown as a creeper on walls, trees and hanging baskets. It is also very efficient at removing indoor air pollutants such as formaldehyde, xylene, and benzene. For the last two years, during February when temperature ranges from 20-25°C, severe foliar infections were observed in the region of Southern Andhra Pradesh. The present study was aimed at identifying the causal agent of leaf blight on *Scindapsus aureus*.

Symptoms initially appeared as small circular spots, light brown in colour. Later, many spots became irregular shaped and dark brown to grey, while others remained circular with concentric rings or zones. On severely affected leaves several spots coalesced to form large necrotic lesions, ultimately leading to drying of the leaves (Fig. 1). Symptoms included chlorotic and necrotic lesions on the leaves that spread down the stems in badly affected plants.

Diseased leaves were collected in sterilized polythene bags and brought into the laboratory for isolation of pathogen. The pathogen was isolated by tissue segment method (Rangaswami, 1958) on potato dextrose agar (PDA) medium. Infected leaves were cut into small pieces of 1.0-1.5 cm, surface sterilized with 0.1% HgCl₂ for 1 minute and washed in sterile distilled water thrice and blot dried with sterilized filter paper. Then the leaf bits were placed in petriplates containing PDA medium. The plates were incubated at 27±1°C for 5 days and observed for fungal growth. The isolated pathogen was identified on the basis of their colony characteristics and conidial morphology with the help of standard keys (Ellis, 1971).

The fungus on PDA produced abundant, branched, septate, brownish mycelia. Conidiophores were simple, septate, and brown in colour. The conidia were produced in chains, muriform with 5 to 8 transverse septa and a few longitudinal septa, obclavate, obpyriform, ovoid, ellipsoid with short beak. The size of the conidia was 20-63 × 9-18 μm and a beak of 2-5 μm (Fig. 2). On the basis of the morphological characteristics of the conidiophores and conidia, the pathogen was identified as *Alternaria alternata* (Fr.) Keissler. Morphological identification was confirmed by amplification of the internal transcribed spacer (ITS) region. Primers used were AAF2 (5'-TGCAATCAGCGTCAGTAACAAAT-3') and AAR3 (5'-

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Fig. 1. *Scindapsus aureus* leaf infected with blight caused by *Alternaria alternata*

ATGGATGCTAGACCTTTGCTGAT-3'), specifically designed for identification of *Alternaria alternata* (Konstantinova *et al.*, 2002). PCR products were sequenced and the identity of isolates confirmed by a BLAST search on the GenBank database. Comparison of the almost complete 18S rDNA sequence (571 bp) of the test strain showed 100% sequence identity to *Alternaria alternata* (GenBank Accession No. AB470912.1). Pathogenicity test was conducted on 60-days old potted money plants by spraying with a spore suspension (5×10^5 spores per ml) using an atomizer in the late evening. Inoculated plants were covered with a polythene bag and incubated at 27°C with a 14 h photoperiod. After 7 days typical leaf blight symptoms could be seen. Plants were heavily blighted 20 days after inoculation. At the same time control leaves, sprayed with distilled water, did not develop any symptoms.



Fig. 2. Microphotograph of conidiophores and conidia of *A. alternata* ($\times 400$)

The pathogen was consistently re-isolated from lesions, thereby completing Koch's postulates. This is believed to be the first report of *Alternaria alternata* (Fr.) Keissler on money plant.

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