



First report of leaf blight of boat lily caused by *Curvularia eragrostidis* in India

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ABSTRACT

Leaves showing reddish brown, ring-shaped spots, surrounded by chlorotic tissue, then rapidly enlarged to be oblong and gradually coalesced and expanded around the leaf. The infected leaf completely girdled within the next 4-6 days, which ultimately led to plant death. Desiccation of diseased tissue resulted in shrivelling of the leaf blades were frequently encountered during survey was conducted on April 2013. On isolations, the diseases tissues yielded a pure fungal culture, which was identified as *Curvularia eragrostidis*. The fungus produced the original symptoms in pathogenicity tests. This forms the first report on *C. eragrostidis* infecting *Tradescantia spathacea*. .

Key Words: *Tradescantia spathacea*, *Curvularia eragrostidis*, leaf blight

INTRODUCTION

Boat lily (*Tradescantia spathacea*) is a semi-epiphytic herbaceous shrub with underground rhizomes, clumping rosette form that has been introduced to South Asia and many Pacific Islands from its native range in the tropical America. It belongs to the family Commelinaceae and they are called by different names viz., oyster plant, moses-in-the-cradle, moses-in-a-boat, moses-in-the-bulrushes, men-in-a-boat. It has rosettes of waxy lance-shaped leaves, elongate, broadly linear-lanceolate, up to 30-40 cm long and 4-6 cm wide. The upper surface of leaves is green and the lower reddish-purple. Flowers are small, white, nestled in purple boat-shaped bracts, produced whole year round at leaf axils. The stem is trunk-like, short and stout, nearly hidden by overlapping leaves. Fruits are capsules with 2 seeds. It is primarily grown for bedding and rock gardens. The reddening effect of the irritating juice has been used for cheek colouring. The flower is used medicinally for the treatment of dysentery, enterorrhagia and hemoptysis. Plant believed to possess anti-microbial, insecticidal, anti-inflammatory and anti-cancer properties. Leaves

boiled and made into a purple-coloured herbal tea to relieve body heatiness (Richard and Hawke 2010).

MATERIALS AND METHODS

During a recent survey of polyhouses located at Faculty of Agriculture, Annamalai University (Chidambaram); Government Botanical Garden, Udhamandalam (Ooty); Horticultural College and Research Institute (Periyakulam) was observed with severely blighted leaves. Symptoms appeared on the leaves as reddish brown, ring-shaped spots, surrounded by chlorotic tissue, then rapidly enlarged to be oblong and gradually coalesced and expanded around the leaf. The infected leaf completely girdled within the next 4-6 days, which ultimately led to plant death. Desiccation of diseased tissue resulted in shrivelling of the leaf blades (Fig. 1A). Diseased leaves were collected and washed in running tap water, cut into pieces (1 cm long), surface sterilized with 0.5% solution of sodium hypochlorite and rinsed in three changes of sterile distilled water. Four pieces were placed per Petri dish containing 20 ml potato dextrose agar (PDA) medium amended with streptomycin (to arrest the bacterial growth) and then incubated at 28±2°C for 5 days. Pure cultures were

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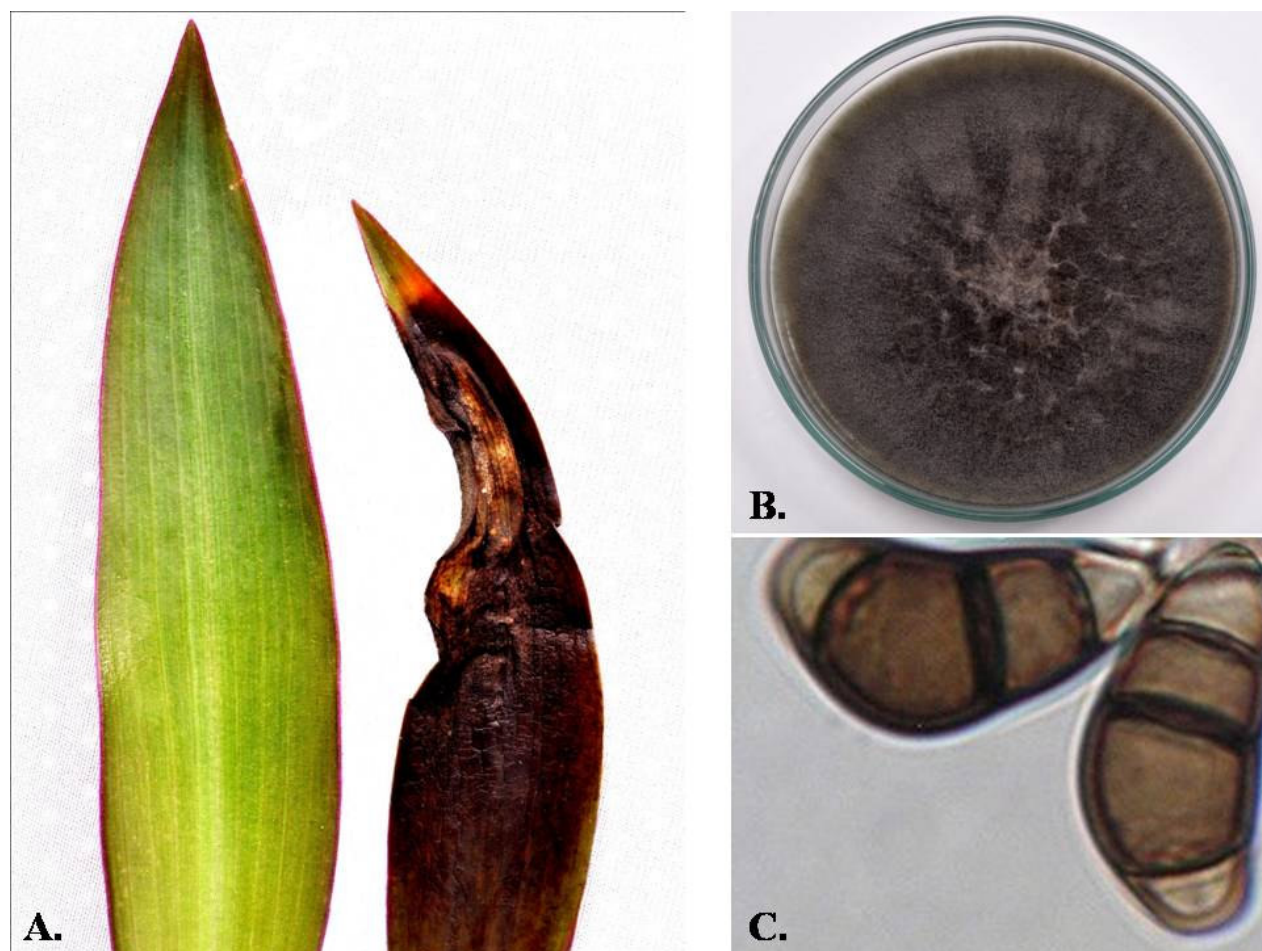


Fig. 1. A) symptoms of leaf blight of boat lily; B) Axenic culture of *Curvularia eragrostidis*; C) conidia of *Curvularia eragrostidis* (24.2×13.3 μm).

obtained by transferring hyphal tips to PDA medium and they were maintained on PDA slants at 4°C (Fig. 1B).

Pathogenicity of the fungus was confirmed by spray inoculation with spore suspension of the fungus. The pot-grown apparently healthy leaves of boat lily plants sprayed with the spore suspensions of 1.0×10^6 conidia/ml of *Curvularia eragrostidis* supplemented with 0.1% (v/v) Tween-80. Uninoculated control seedlings were sprayed with water amended with 0.1% (v/v) Tween-80. The experiment was repeated once. The symptoms started appearing in 10 days after inoculation reddish brown colour spots are seen on the leaves and surrounded by chlorotic tissue. Uninoculated control plants did not

show any symptoms. Disease leaves were collected and the fungi were isolated from symptomatic lesions to fulfill Koch's postulates.

RESULTS AND DISCUSSION

Single-spore culturing of the fungus yielded *Curvularia eragrostidis* on the basis of morphological characteristics. The fungus was identified as *Curvularia eragrostidis* as described by Ellis (1971); Miller (1971). National Fungal Culture Collection of India (NFCCI), Agharkar Research Institute, Pune, India (Accession No. OP 93) confirmed the identity. Colonies on PDA medium are

fast growing, brown to blackish brown on upper surface whereas black on reverse side. Conidia are straight to slightly curve with three transverse septa. In general, the size of the two central cells of each spore was equal and larger than the outer two polar cells, and the colour of the former was darker than the latter. The septa separated by the two central cells were usually very distinct (Fig. 1C). Spores ranged in size from 2.4 to 3.6 μ m in length and from 0.8 to 1.5 μ m in width. The search of literature revealed that boat lily is a pathogenic to boat lily. To our knowledge, on the basis of the literature, this is the first report from India and worldwide showing that *Curvularia eragrostidis* infects *T. spathacea*.

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