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A new record of leaf blight of ribben plant caused by *Alternaria alternata* in India

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ABSTRACT

The symptoms of disease appear as small dark reddish brown necrotic spots on the infected leaves which enlarge in size and coalesce to form big elongated concentric necrotic lesions that results into severe blight symptom. The infected plants become stunted and entire plant collapsed within the next 5-7 days. On isolations, the diseased tissues yielded a pure fungal culture, which was identified as *Alternaria alternata.* The fungus produced the original symptoms in pathogenicity tests. This forms the first report on *A. alternata* infecting *Chlorophytum comosum.*

Key Words: *Chlorophytum comosum, Alternaia alternata*

INTRODUCTION

Ribben plant (*Chlorophytum comosum*) is a tufted grass-like clump forming, evergreen perennial herb belonging to the family Liliaceae. It is native to tropical and southern Africa and is widely used as hanging baskets in households. Roots are used as in Chinese traditional medicine for treating bronchitis, fractures and burns.

MATERIALS AND METHODS

During a recent survey of polyhouses located at Faculty of Agriculture, Annamalai University (Chidambaram); Horticulture Research Station (Yercaud); Horticultural College and Research Institute (Periyakulam); Tamil Nadu Agricultural University (Coimbatore) the plants of *C. comosum* were observed with severely blighted leaves during July 2012. Disease appear as small dark reddish brown necrotic spots all over the infected leaves which enlarge in size and coalesce to form big elongated necrotic lesions that results into severe blight symptom The infected plants become stunted and entire plant collapsed (Fig. 1). The infected leaf bits along with some healthy portions were cut into small bits and surface sterilized using 1:1000 mercuric chloride solutions for 30 sec. The bits were washed thoroughly in sterile distilled water for three times to remove traces of mercuric chloride. The molten warm potato dextrose agar (PDA) medium was poured into sterilized Petri plates and allowed to solidify. The surface sterilized leaf bits were placed on PDA medium. These plates were incubated at room temperature for 28±2°C and observed periodically for the fungal growth. Pure cultures were obtained by transferring hyphal tips to PDA medium and they were maintained on PDA slants. The slants were incubated at 28±2°C for sporulation for 10-18 days. Then, such slants containing apparently pure culture.

Pathogenicity of the fungus was confirmed by spray inoculation with spore suspension of the fungus. The pot-grown healthy leaves of ribben plants sprayed with the spore suspensions of 1.0×10^6 conidia/ml of *Alternaria alternata* 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 11 days after inoculation as circular to irregular, dark reddish brown spots at the leaf tip. Uninoculated control plants did not show any symptoms. Disease leaves were collected and the fungi were isolated from symptomatic lesions to fulfil Koch's postulates.

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Fig. 1. Symptoms of leaf blight of ribben plant

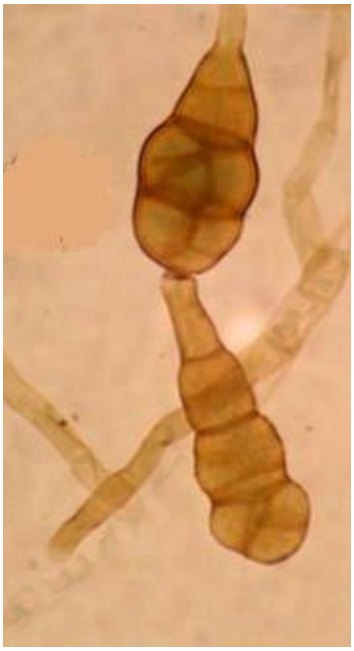

Fig. 2. Conidia of *Alternaria alternata*

RESULTS AND DISCUSSION

Single-spore culturing of the fungus yielded *Alternaria alternata* on the basis of morphological characteristics. The fungus was identified as *Alternaria alternata* as described by Pandey and Vishwakarma, 1999 and Anderson et al (2001). National Fungal Culture Collection of India (NFCCI), Agharkar Research Institute, Pune, India (Accession No. OP 94) confirmed the identity. Colonies on PDA medium are fast growing, black to olivaceous-black or grayish colour. Mycelium is sub-hyaline, septate, branched and measure 3.3 to 5.2 µm size in diameter. Conidiophores are pale brown, fasciculate, simple or branched, straight or flexuous, septate, dark coloured, geniculate and 47 × 3.2 µm size. Conidia are formed in chains of 2 to 4, muriform, short beaked, smooth walled, light brown in colour and 38 × 12 µm size (Fig. 2). The search of the literature revealed that this is the first report from India and worldwide showing that *Alternaria alternata* infects ribben plant.

REFERENCES

Anderson B, Kroger E and Roberts RG. 2001. Chemical and morphological segregation of *Alternaria alternata, Alternaria gaisen* and *Alternaria longipes.* Mycol Res 105:291-299.

Conover CA and Poole RT. 1990. Light and fertilizer recommendation for production of acclimatized potted foliage plants. CFREC-Apopka Research Report-RH-90-1.

Pandey KK and Vishwakarma SN**.** 1999. Morphological and symptomatological variations in *Alternaria alternata* causing leaf blight in brinjal. J Mycol Pl Pathol 29:350-354.