

A new *Phytophthora* - leaf blight of *Dieffenbachia* spp.

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During the survey of local flora we observed an outbreak of leaf blight of *Dieffenbachia picta* and *D. amonae* the most popular in-door and out-door ornamental plants, growing in almost every bungalow gardens. The disease was first observed in Jabalpur during July, 1993 and since then it has been recurring every year after the onset of South -West monsoon . The disease was sporadic but in humid atmospheric conditions (usually in rainy season) leaf spot and rot symptoms become conspicuous. Microscopic examination of scarps from the lower surface of the diseased parts revealed the presence of abundant papillate pear shaped sporangia and rich coenocytic mycelium characteristic of the genus *Phytophthora*. A perusal of the available relevant literature revealed no report of the fungus on this plant from India (Bilgrami *et al.* 1991). This article briefly describes symptoms of the disease and morphological characters of the pathogenic fungus.

The initial symptoms are observed as hydrotic to light brown, irregular spots on leaf lamina, the spots increase and develop into a wet-rot covering major portion of the leaf lamina. The rot extends to the petiole and further to the stem. The diseased areas of leaves show distinct concentric rings on account of unequal growth of the pathogen under dry conditions. The infection is favoured by prolonged drizzling rains and warm moist weather. In congenial conditions the diseased portion of leaf was covered with white downy growth, consisting of sporangiophores and sporangia of the pathogen.

Isolations from such infected spots repeatedly yielded a pure culture of a species of *Phytophthora* on oat meal agar medium, which proved highly pathogenic to

healthy leaves of *Dieffenbachia* in artificial inoculation experiments, producing characteristic symptoms within four days. Reisolation made from artificially infected leaves yielded the same fungus.

The culture was maintained on oat meal agar on which it exhibits irregular rosette, growth completely covering the 90 mm Petri plate in 5 days. The young mycelium was hyaline, coenocytic, broad and tuberculate measuring 7.2 μm in diameter. It produces abundant crop of deciduous sporangia in water within 36 h. Sporangiophores are thin, and sympodially branched. Sporangia are highly variable in shape and size: broadly ovoid, elongated or lemon shaped with prominent papilla, measuring 35 to 80 μm x 28 to 35 μm with short pedicel. The fungus produces abundant fluffy, cottony growth on several natural media viz. french bean, corn meal, rape seed agar, carrot agar with abundant crops of sporangia and few chlamydospores. Oospores were produced some times in old culture and pairing with other isolates, on oat meal medium, measuring 18-27 μm with amphigynous antheridia. The fungus produced very little growth at 15°C, optimum at 25-30°C and almost nil above 35°C. On the basis of above morphological and culture characteristics, the pathogen was indentified as *Phytophthora nicotinae* var. *parasitica* Van Breda de Haan.

Earlier *Phytophthora palmivora* Butler has been reported on *D. picta* from Sanfransisco (Tompkins and Tucker, 1947) and *P. nicotianae* var. *parasitica* Breda de Haan from Taiwan on *D. maculata* (Ann, 1992). Hence the disease herein described is a new record for India.

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