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New report on leaf spot of Teak (*Tectona grandis* L.F.) caused by *Phomopsis tectonae* from Gujarat, India

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ABSTRACT

Teak (*Tectona grandis* L.f.) is an important forest tree which is used for several furniture and other wood products. Teak plant seedlings infected with leaf spot disease has been observed in Anand, Gujarat. It causes leaf drying starting from the tips of leaves which resulting into complete defoliation. It is a serious nursery disease which leads up to 95 per cent loss in the seedlings. The pathogen was identified as *Phomopsis tectonae* through cultural and microscopic characteristics and pathogenicity was proved following standard Koch's postulates. A perusal of literature revealed that this is the first report on occurrence of Phomopsis leaf tip blight disease of Teak (*T. grandis* L.f.) seedlings from Gujarat.

Key words: Teak, Leaf spot, *Phomopsis tectonae*.

Teak is a tropical hardwood tree of species *Tectona grandis*. The species is placed in the family Lamiaceae. *T. grandis* is a large, deciduous tree that is dominant in mixed hardwood forests. It has small, fragrant white flowers and papery leaves that are often hairy on the lower surface. Teak timber is particularly valued for its durability and water resistance and is used for boat building, exterior construction, veneer, furniture, carvings, turnings, and other small wood projects. Teak is native to South and Southeast Asia mainly India, Indonesia, Malaysia, Thailand and Burma but is naturalized and cultivated in many countries in Africa and the Caribbean. It is a yellowish brown timber with good grain and texture. Teak's high oil content, high tensile strength and tight grain make it particularly suitable for outdoor furniture applications. Teak leaf spot causes leaf drying starting from the tips of leaves which results into complete defoliation of seedling. It is a serious nursery disease which leads up to 95 per cent loss in the seedlings (Balasundaran *et al.*, 1995).

MATERIALS AND METHODS

Sample collection, identification and pathogenicity test

During visit in the nursery of forest trees near Anand, Gujarat, we found some Teak plant seedlings raised in polyhouse by Forest department, Gujarat were infected with leaf spot disease. Further, the pathogen was isolated on PDA medium through tissue isolation method and pure culture of the pathogen was maintained at 27 ± 1°C in BOD incubator. The fungus was then identified as *Phompsis tectonae* based on cultural and microscopic characteristics as well as by referring earlier reported literatures. The pathogenicity was proved by following Koch's postulates on Teak plant seedlings.

RESULTS AND DISCUSSION

Symptomatology and Identification of pathogen

The typical symptoms observed were the development of light brown necrosis on margin of the leaves which gradually advanced towards midrib. The disease spreaded to the upper leaves, petiole and ultimately to the terminal bud and stem tip resulting into drying of upper portion of stem. Later on, the affected seedlings died quickly. Leaves severely affected by this leaf spot got dried up and defoliated. If timely control measures are not taken, the disease spread to the entire nursery, reducing number of healthy seedlings available for planting.

Tiwari *et al.*, (1981) reported that some Teak plants were infected by leaf spotting fungi and further

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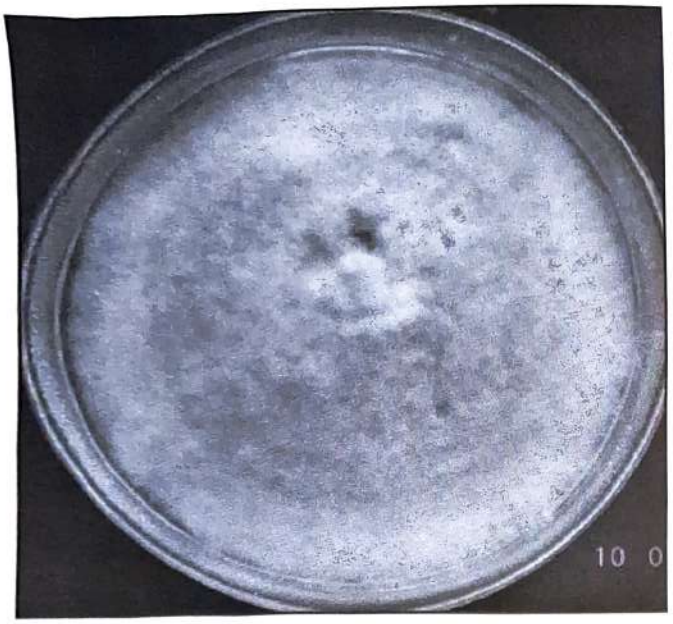

Figure 1: Pure culture of isolated fungi (*Phomopsis tectonae*)

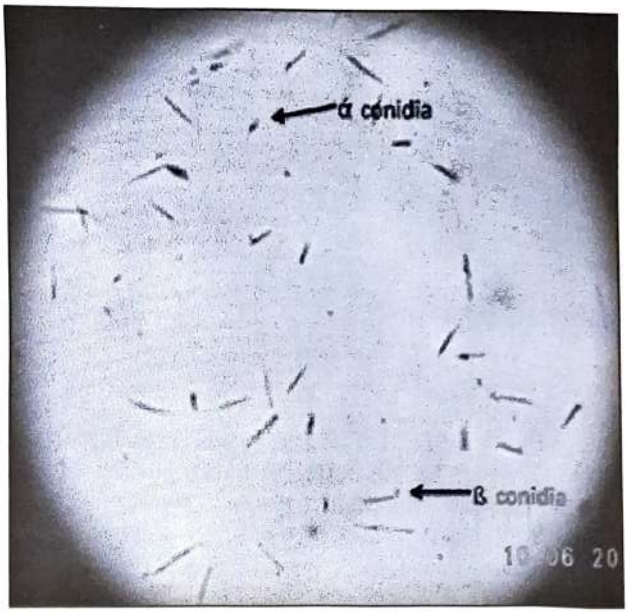

Figure 2: Conidia (α and ß) of *Phomopsis tectonae* (40X)

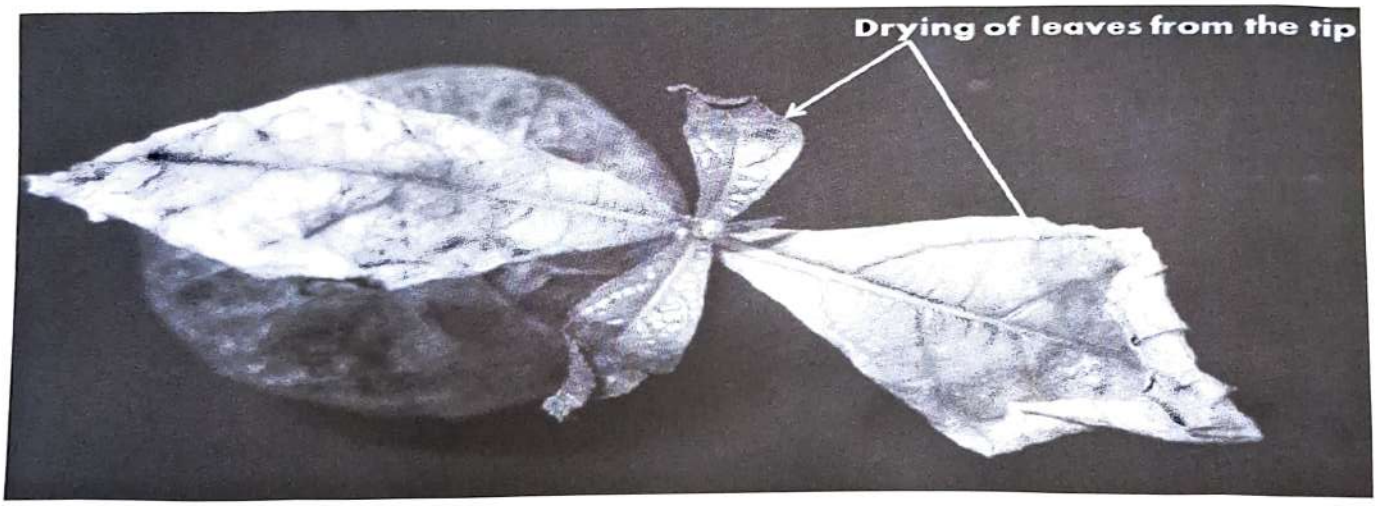

Figure 3: Leaf spot symptoms on leaves of Teak seedling

confirmed it as *Phomopsis tectonae* at Jabalpur, India. Similarly, Balasundaran *et al.*, (1995) reported that, 95 per cent of the nurseries were infected with leaf infection of *Phomopsis* sp., or *Phomopsis* sp. in combination with *C. gloeosporioides*, in Kerala.

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