

PHOMOPSIS LEUCAENAE SP. NOV. CAUSING FOLIAR INFECTION ON LEUCAENA LEUCOCEPHALA IN KERALA, INDIA

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LEUCAENA LEUCOCEPHALA (Lam) de Wit, a multi-purpose tree species, is being raised under social forestry programmes in India. A severe foliar infection of *L. leucocephala* was observed in nurseries and trial plantations at different localities in Kerala, during January/March 1983 and 1984. The disease is manifested in the form of pinhead black necrotic lesions on leaflets, petioles and rachii (figure 1). The lesions on petioles and rachii coalesce to form large necrotic areas. Severe infection causes yellowing and premature falling of the leaflets. The fungus consistently isolated from the diseased tissues on PDA (potato dextrose agar) medium was identified as *Phomopsis* sp. (IMI 287777-287779). Pathogenicity of the fungus was confirmed in artificial inoculation trials. Since no *Phomopsis* has been previously reported on *Leucaena*, it is proposed to describe the present isolate as a new species.



Figure 1. Foliar infection of *L. leucocephala*; note the pinhead necrotic lesions on the leaflets.

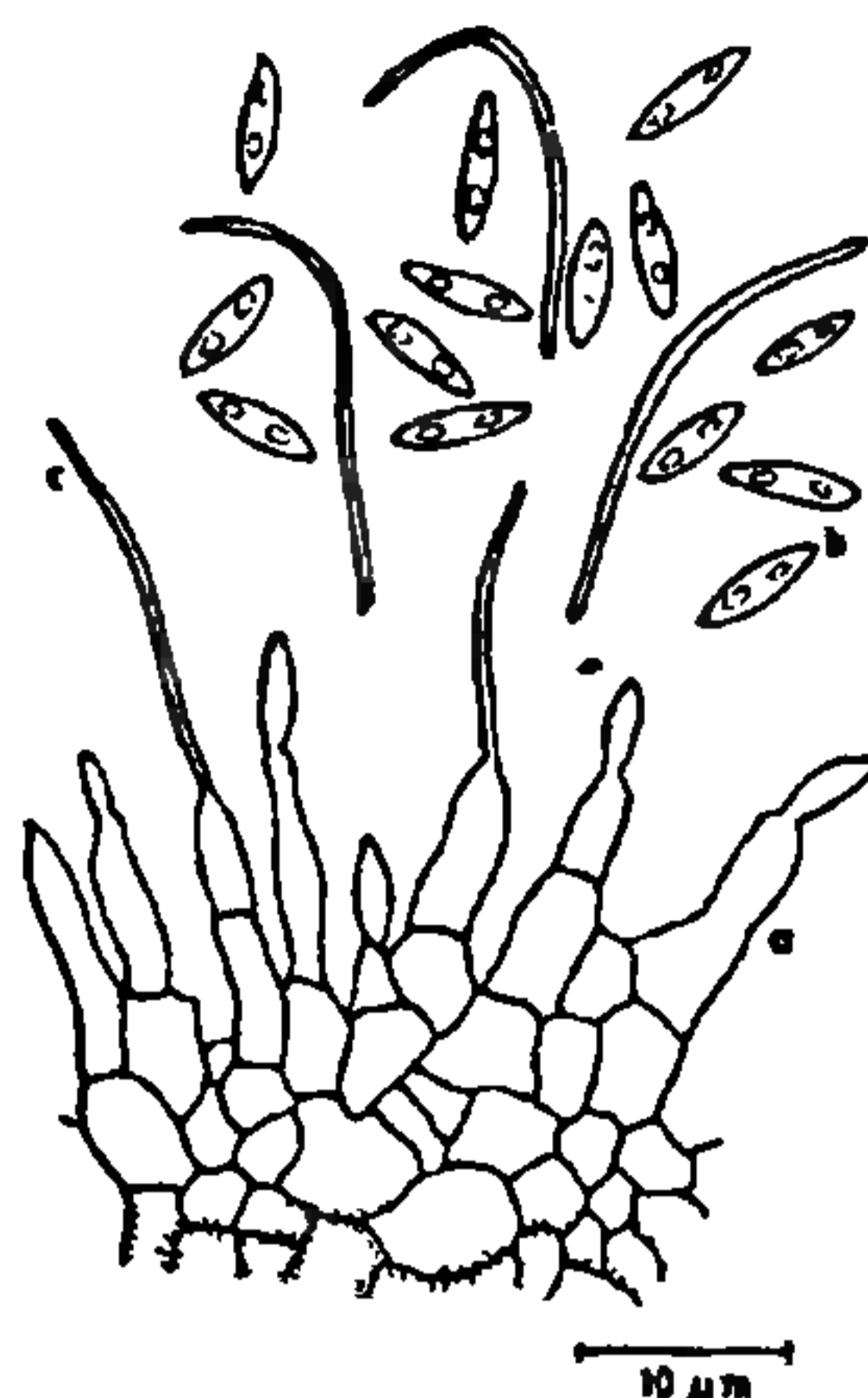


Figure 2. Conidiophore (a) α -conidia (b) and β -conidia (c) of *Phomopsis leucaenae* sp. nov.

Phomopsis leucaenae Mohan et Sharma sp. nov.

Coloniae in agar potato dextrose fusco-griseae vel flavae. Pycnidia nigra, vel obscure brunnea, numerosa, stromatica, solitaria vel aggregata, unilocularia vel multilocularia, ostiolata, usque ad 650 μm lata; pycnidiorum stromaticus ex cellulis multistratosus, brunneis, saturatis et crassoparietalibus, compositus. Conidiophora hyalina, simplicia vel ramosa, cylindrica vel obclavata, 10-18 \times 3.5 μm . Alpha conidia hyalina, fusiformia, biguttulata, raro eguttulata 4.4-7.1 \times 2.2-2.6 μm . Beta conidia hyalina, filiformia pleurumque curvata 18-22 \times 0.7 μm (figure 2).

In folio vivo ex *Leucaena leucocephala*, Peechi, Kerala, India, C. Mohanan, January, 1983, IMI 287777-287779 (Holotypus).

Colony on PDA greyish brown turning to pale yellow. Pycnidia black or blackish brown, numerous, stromatic, solitary or aggregated, unilocular or multilocular, ostiolate up to 650 μm wide; pycnidial wall stromatic, composed of several layers of cells, thick-walled and pigmented on the outside. Conidiophore hyaline, simple or branched, non-septate or septate, cylindrical to obclavate, straight 10-18 \times 3.5 μm . Conidia ooze out as a yellowish mass; conidia of two types; α -conidia hyaline, unicellular, fusiform, biguttulate, 4.4-7.1 \times 2.2-2.6 μm ; β -conidia hyaline, unicellular, filiform, mostly curved, 18-22 \times 0.7 μm .

On living leaves *Leucaena leucocephala*, KFRI campus, Peechi, Kerala, India. C. Mohanan, January 1983, IMI 287777-287779.

L. leucocephala is known to show high resistance to pests and diseases as only a few diseases have been recorded on this host¹⁻¹⁰. So far, from India only one serious disease of foliage and stem causing gummosis due to *Fusarium semitectum* Berk. and Rav. has been recorded⁹. This is the first record of foliar infection of *L. leucocephala* from Kerala.

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TOXICITY OF INDUSTRIAL EFFLUENTS TO THE FRESHWATER CAT FISH *MYSTUS KELETIUS*

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In India, large quantities of industrial effluents are discharged into the nearby water bodies, and fish and other organisms are seriously affected by prolonged exposure to diluted concentrations¹. Toxicological reports of pesticides^{2,3} and heavy metals^{4,5} on fish mortality are plenty but information concerning the effects of industrial effluents is meagre⁶. The present investigation is a preliminary report dealing with mortality of the cat fish, *Mystus keletius* as a function of resistance time at different concentrations of distillery and textile mill effluents.

Healthy *M. keletius* (10 ± 2 g live weight) were acclimatized to laboratory conditions by feeding on beef slices *ad libitum* for a fortnight.

Feeding was stopped one day before the commencement of the experiment; static bioassay method⁷ was followed to find out the toxicological effects of distillery and textile mill effluents. The test individuals were placed in a glass trough (capacity 15 l) containing dechlorinated tap water and served as control. Serial dilutions of the effluents were prepared using dechlorinated tap water⁸. Each concentration was treated in triplicate. Ten *M. keletius* were exposed to each concentration and the

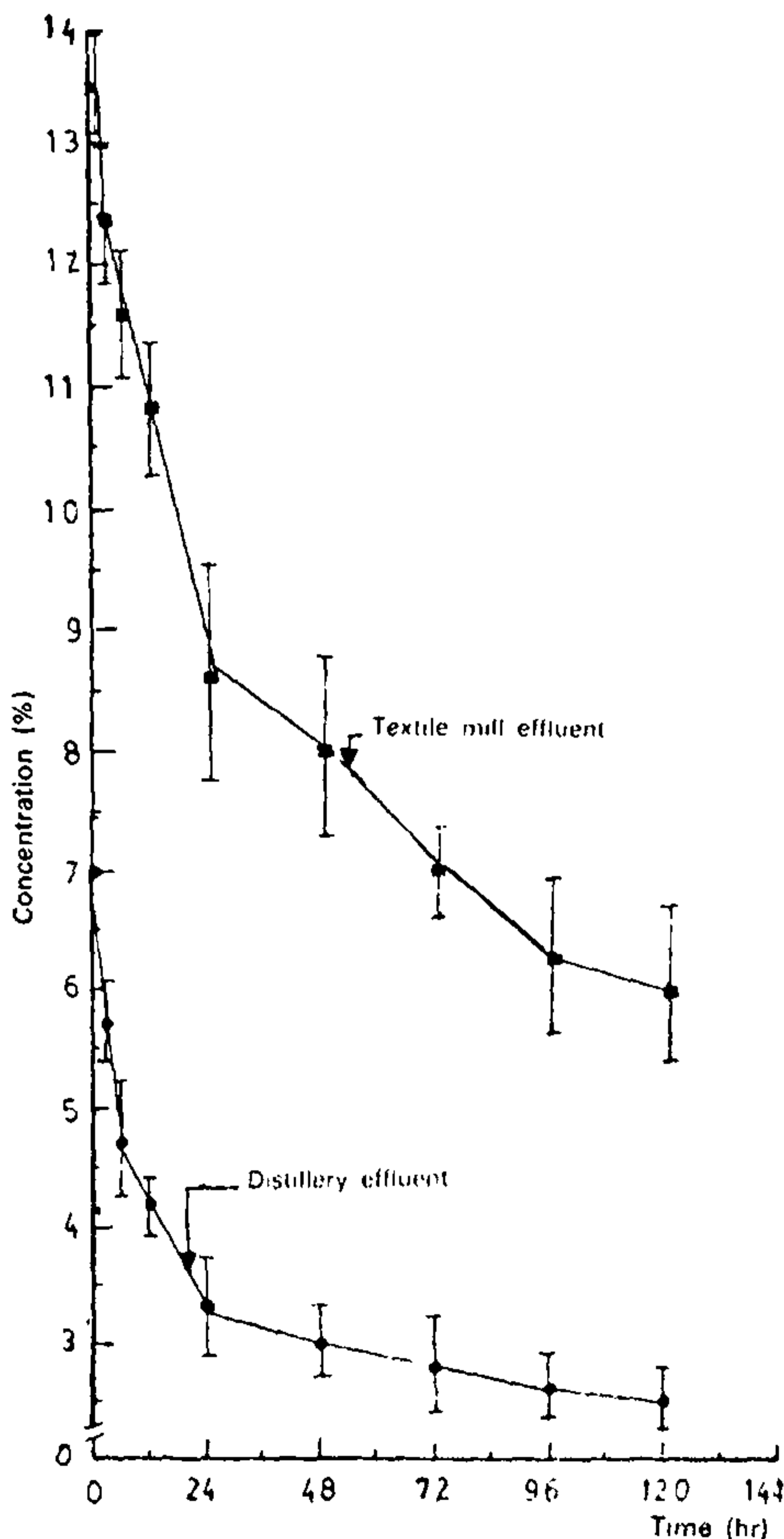


Figure 1. Mean LC₅₀ with upper and lower confidential limits of Distillery and Textile mill effluents on *M. keletius*.