

A new species of *Phomopsis* causing phyllode spot and top dying in *Acacia mangium*

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Phomopsis acaciae sp. nov. causing phyllode and top dying in *Acacia mangium* is described, illustrated and compared with other published similar species. The specimen was collected from Seoni forest division, Madhya Pradesh.

Key words : *Acacia mangium*, phyllode disease, *Phomopsis acaciae*, taxonomy.

INTRODUCTION

During a survey of plantation diseases of Madhya Pradesh a parasitic fungus was collected on phyllode of *Acacia mangium* Willd from Seoni forest. The fungus belongs to Coelomycetous genus *Phomopsis* Sacc. and causes phyllode and top dying. It differs from other known species of *Phomopsis* (Dadwal *et al.*, 1987; Groves, 1967; Hyde, 1991; Mohanan & Sharma, 1987, 1988, 1989; Ponnappa, 1971; Rao and Yadav, 1985). Mohanan and Sharma (1988) had reported some other fungi causing diseases of *Acacia mangium* in Kerala. No species of *Phomopsis* has been reported till date on *A. mangium* (Bilgrami *et al.*, 1979, 1981; Mukerji and Bhasin, 1986; Sutton, 1980).

Phomopsis acaciae Dadwal, R. K. Verma, R. K. et. Jamaluddin sp. nov.

(Fig. 1)

Maculae : hologenae, 8 cm latae, brunneae vel atrae. **Mycelium immersum :** hyphae ramosa, septata, hyaline vel pallide brunnea. **Conidiomata :** stromatica, immersa brunnea vel atro brunnea, separata, globosa vel applanata, unilocularia, usque 125 - 175 × 70 - 100 µm, ex cellulis brunneis (*textura angularia*) composita. **Ostiola :** singula, circularia 40 - 55 µm lata. **Coidiophora :** simplicia, raro ramosa ex basim 1 - 2 septata, hyalina 4.0 - 15.0 × 1.5 - 2.5 µm. **Cellulae conidiogenae :**

enterblasticae, phialidicae, integratae, hyalinae, cylindrica, usque 4.0 - 6.5 - 1.5 - 2.0 µm. **Conidia :** α conidis hyalinae, rectae, ovatae, leniter funiformis, guttulatae, aseptatae, usque 6.0 - 10.5 × 1.5 - 2.0 µm, β conidis non visa.

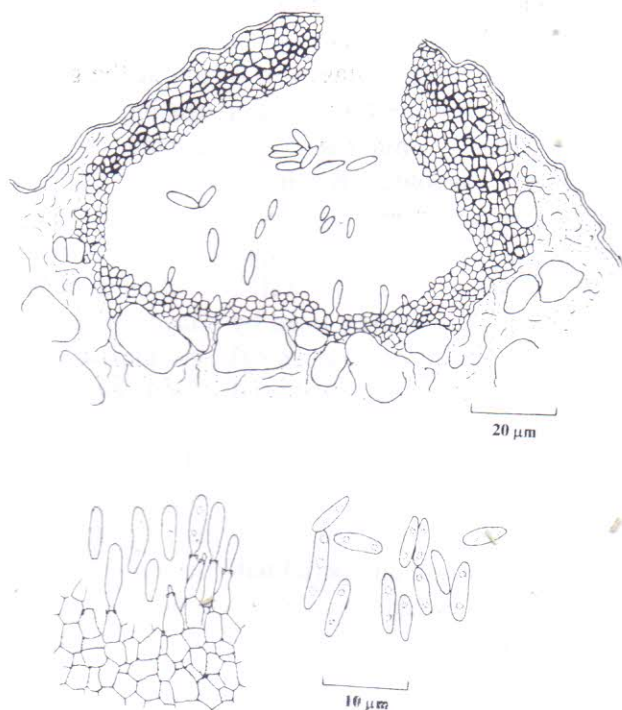


Fig. 1: *Phomopsis acaciae* section of conidioma showing internal structures, conidiogenous cells and developing conidia and mature conidia.

In vivis phylloidiis *Acacia mangium* Willd

Table 1 : Comparative morphology of some closely related species of *Phomopsis*

Name of species	Size of pycnidia	Size of spores	Morphology of conidia
<i>Phomopsis acaciae</i>	125-175 × 70-100 µm	α conidia 6.0-10.5 × 1.5-2.0 µm β conidia absent	Hyaline, straight to ovate or slightly fusiform usually biguttulate.
<i>Phomopsis amherstiae</i>	243-292 × 194-240 µm	α conidia 7.5-10.2 × 1.75-2.0 µm β conidia absent	Hyaline, aseptate ellipsoid or ovoid with acute ends.
<i>Phomopsis obscurans</i>	140-200 µm	α conidia 5.5-7.5 × 1.5-2.0 µm β conidia absent	Biguttulate.
<i>Phomopsis sethii</i>	68.6-231 × 68-217.6 µm	α conidia 5.4-10.0 × 1.5-3.1 µm β conidia absent	Hyaline to sub hyaline, guttulate fusiform to oval produced in large number and released in cirrus.
<i>Phomopsis stipata</i>	120-185 µm	α conidia 16.5-24.0 × 1.5-2.0 µm β conidia absent	Fusiform, sigmoid to hamate or curved.
<i>Phomopsis terminaliae</i>	Up to 250 µm diameter	α conidia 9.0-10.5 × 2.5 µm β conidia absent	Fusiform to ellipsoid, often obtuse at each end, 2-4 guttulate.
<i>Phomopsis tersa</i>	Up to 650 µm diameter	α conidia 6.5-7.5 × 2.5 µm β conidia absent	Straight, cylindrical, obtuse, sometimes constructed in the middle, biguttulate.

(Mimosaceae) Seoni Silva, Jamaluddin, Feb. 1989, IMI 340228, holotypus.

Infection hologenous begins from tip of the phyllode and travel downwards to the base, later covering half of the phyllode, up to 8 cm wide. The infected parts turn dark brown, brittle and withered off. Dark-black dots also appear and spread over the spots. In advance stages of infection, the growing tender shoots are also infected causing shedding of phyllodes. *Mycelium* : immersed, hyphae branched, septate, hyaline - pale brown. *Conidiomata* : stromatic, immersed, brown to dark brown, separate, globose - appalanate, unilocular, 125 - 175 × 70 - 100 µm, wall composed of brown cells (*texura angularis*) lined by a layer of smaller light brown cells. *Ostiole* : single, circular, 40 - 55 µm wide. *Conidiophores* : simple, rarely branched, 1 - 2 septate at base, hyaline, formed from the inner cells of the locular walls, 4.0 - 15.0 × 1.5 - 2.5 µm. *Conidiogenous cells* : enteroblastic, phidic, determinate, integrated, hyaline, cylindrical, collarette channel and periclinal thickening minute, 4.0 - 6.5 × 1.5 - 2.0 µm. *Conidia* : only one type β conidia not seen, α conidia hyaline, straight to ovate or slightly fusiform, usually biguttulate, rarely with more guttules, aseptate 6.0 - 10.5 × 1.5 - 2.0 µm.

Collection examined : On living phyllode of *Acacia mangium* Willd. (Mimosaceae), Seoni forest, M. P., Jamaluddin, dated, February 1989. IMI 340228, holotypus.

Sutton (1980) reported that some species of *Phomopsis* lack β conidia and transferred some species of *Phoma* into *Phomopsis*. The present species is compared with those closely related species of *Phomopsis*, which lack β conidia. (Table 1) and found different.

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