
Studies on Dematiaceous Hyphomycetes of West Bengal, India

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Seven species of Dematiaceous Hyphomycetes, namely, *Sirosporium gliricidiae* (Syd.) Deighton, *Cercospora averrhoae* Petch, *C. guineensis* Kranz, *Alternaria porri* (Ellis) Cif., *A. eichhorniae* Nag Raj and Ponnappa, *A. passiflorae* Simmonds and *Mycovellosiella pithecellobii* (Mulder) Deighton, are described here.

Key Words : Dematiaceous Hyphomycetes, West Bengal.

INTRODUCTION

In continuation of the taxonomic investigation (Ray, 1988, 1989, 1990), another seven species of Dematiaceous Hyphomycetes belonging to the genera *Sirosporium*, *Cercospora*, *Alternaria* and *Mycovelloseilla* are collected and described first time from West Bengal.

MATERIALS AND METHODS

The fungal specimens were collected from living leaves forming characteristic symptoms i. e. spots, blotches and blights throughout the different seasons of West Bengal. They are dried and preserved. They are worked out from natural and preserved substrates and their identifications upto species level are confirmed from Commonwealth Mycological Institute (IMI), England.

DESCRIPTION OF THE SPECIES

Sirosporium gliricidiae (Syd.) Deighton

More Dematiaceous Hyphomycetes, P. 299, 1976

Spots amphigenous, well developed on upper surface, primarily develops as

yellowish flake on upper surface and reddish on lower surface, olive or greyish olive at maturity, circular to irregular, a few, scattered, marginal spots are highly irregular, necrotic; caespituli amphigenous effuse, punctiform on upper surface; stroma well developed, prominently large, globose to slightly irregular, brown to blackish brown, 45.5-99.5 μm in diam; conidiophores develop from the stroma of the upper surface, densely fasciculate or from the superficial mycelium of the lower surface, brownish to golden brownish, mediumly thick walled, unbranched, smooth, 0-4 septate, straight to bent, sinuous, few dilated and geniculate, numerous scars on the surface, base swollen, apex obtuse to rounded with thickened scars, 10.5-33.5 x 3.00 x 5.00 μm ; conidia hyaline to very pale brown, obclavate, 0-11 septate, septa indistinct to distinct, straight to curved, smooth, sometime constricted at the septa, some cells become more or less rounded, base obconic, apex rounded 15.00-67.5-3.00 6.00 μm .

Specimen studied : On *Gliricidia maculata* HBK (Fam : Leguminosae), Amtolla, 24 parganas (S), West Bengal (IMI 242952), leg. J. B. Ray, No. 30, 1979.

Cercospora averrhoae Petch.

Ann. Roy Bot. Gard., Peradeniya 6 : 249, 1917

Spots amphigenous, circular, whitish center with distinct dark purple brown margin, sometimes necrotic, 1-4.4 mm. in diam., caespituli amphigenous, well-developed on lower surface, stroma absent or few loosely arranged brown cell emerging out through stomata; conidiophores fasciculate (2-11), divergent, pale to very pale olivaceous brown, paler towards the tip, unbranched cylindrical, smooth, usually 1-4 septate, straight to bent, thickwalled, rarely geniculate, base swollen apex sub truncate with medium spore scar, 15.00-76.00 x 3.00-4.5 μm ; conidia hyaline, acicular, indistinctly 1-26 septate, straight to mildly curved, base truncate to obconic with distinct hilum, tip acute, 21.00-170.00 x 2.00-4.00 μm .

Specimen studied : On *Averrhoa carambola* L., (fam. Oxalidaceae), Ghatal, Midnapore, West Bengal, (IMI 234130), leg. J. B. Ray, Jan. 31, 1978.

Cercospora guineensis Kranz

Sydowia 19 : 76-77, 1966

Spots amphigenous, scattered round to irregular sometimes coalescent forming large necrotic area, rusty brown with light yellow areas 3-5 mm. in diam.; caespituli amphigenous, but well developed on lower surface; stroma present, globose to sub-globose, light black brown, coming out through stomata, 9.00-24.00 μm in diam.; conidiophores fasciculate (3-10), divergent, pale olivace-

ous brown, paler towards the tip, cylindrical, thick walled, smooth, unbranched, breadth not uniform, straight to bent, 0-2 geniculate with lateral scars, base swollen, apex roundish with prominent and distinct spore scar, 15.00-48.5 x 3.00-5.5 μm ; conidia cylindric-obclavate, pale olivaceous brownish, indistinctly 0-9 septate, straight to curved, base truncate to obconic, apex acute, 24.00-91.00 x 2.5-4.5 μm .

Specimen studied: On *Melochia corchorifolia* L., (fam: Sterculiaceae), Garia, 24 Parganas (S), West Cengal (IMI 231257), leg. J. B. Ray, July 5, 1978.

Alternaria porri (Ellis) Cif.

J. Dept. Agric. P. Rico, 14 : 30, 1930

Spots formed on lamina, elliptical, virulent, scattered, purple, sometime with dark margin, leaf dries up and finally becomes pale grey to light blackish grey showing spots as "purple blotch", .3-5 mm. extn.; fruiting amphigenous, non stromatic; conidiophores emerging through stomata, pale brownish to deep brownish, usually solitary, rarely in groups (2-3), groups divergent straight to bent, unbranched, thick-walled, 1-6 septate, few geniculate, scars present on the surface, base bulbous, apex rounded with large conidial scar, 42.00-113.00 x 6.00-11.5 μm ; conidia obclavate, ovate-elongate, often rostrate, pale brownish to deep brownish, smooth, straight to curved, transverse septation 4-11, longitudinal and oblique septation 1-3, beak conical to elongated, paler, beak measuring up to 39 μm in length, conidia measuring with beak 51.00-166.5 x 18.00-22.5 μm .

Specimen studied: On *Allium cepa* L., (fam. Liliaceae), Majergram, Nadia, West Bengal, (IMI 226176), leg. J. B. Ray, Feb. 22, 1978.

Alternaria eichhorniae Nag Raj & Ponnappa,

Trans. Br. mycol. Soc. 55 (1), 123-130, 1970

Spots amphigenous, oval to elliptical, sometimes irregular, a few, initially spots appears as faint yellow flake with brown dot at the centre, later become brownish with prominent blackish brown centre surrounded by dark brown margin within faint yellow halo, spots formed on swollen petiole and turns pale grey in colour, 1-2 cm extn.; fruiting epiphyllous, non-stromatic; conidiophores emerging through stomata or from superficial hyphae, usually in groups (3-8), rarely solitary, divergent straight to irregularly bent, margin wavy, unbranched or branched, multiseptate (3-11), smooth, geniculate scars, light brown to golden brown, paler towards the tip, swollen, apex rounded with single conidial scar, 21.00-114.00 x 3.00-6.00 μm ; conidia solitary on the host tissue, obclavate,

ovate, obpyriform, obclavato-cylindric, rarely ellipsoidal, olivaceous brown to deep brown, smooth, thick-walled, median cell prominently bulged, transverse septation 0-8, beak absent in ellipsoidal spore or present, when present short to long, beak cylindrical, tapered, septate, hyaline to light olivaceous, apex bluntly roundish scar present at the apex measuring up to 100 μm in length and 3 μm in wide, conidia measuring with beak 30.5-198.00 x 9.00-15.00 μm ;
 Specimen studied : On *Eichhornia crassipes* (Mart.) Solms., (fam. Pontederiacae), Bongaon, 24 parganas (N), West Bengal, (IMI 226468), leg. J. B. Ray, Feb. 19, 1978.

Alternaria passiflorae Simmonds.

Proc. R. Soc. Qd 49 : 151, 1928

Spots amphigenous, oblong, elliptical, angular to irregular, grey or brown centre with dark margin, 5-2.2 cm extn. ; fruiting amphigenous, abundant on lower surface, non-stromatic ; conidiophores emerging through stomata, pale brown, usually solitary or in groups (2-4), straight to bent, smooth, unbranched, 0-3 septate, thick-walled, tapering towards the apex, bulged at the base, apex roundish with prominent conidial scars, 20.00-100.00 x 6.00-7.5 μm ; conidia solitary, obclavate or ellipsoidal, tapering to beak, pale brown, smooth, thick-walled, curved, constricted at the septa, transverse septation 5-9, longitudinal and oblique septation 0-1, beak terminal, septate, hyaline, long, filiform unbranched, straight to bent and 2.5 μm thick conidia measuring with beak 66.00-191.00 x 9.00-16.00 μm .

Specimen studied : On *Passiflora foetida* L., (fam. Passifloraceae), Amtalla, 24 Parganas (S), West Bengal, leg. J. B. Ray, March 23, 1978.

Mycovellosiella pithecellobii (Mudder) Deighton

Mycol. Pap. Nos. 144. 26, 1979

Spots amphigenous, very minute, irregular, scattered, virulent, pale brown to brown with dark raised margin, coalescent, 2.5-5 mm. in extn. ; casepitiuli amphigenous, floccose on ventral surface ; mycelium both internal and external mycelial hyphae hyaline to pale olivaceous, superficial, smooth, 1.5-4.5 μm in wide, septate, branched, loosely aggregated around the stomata forming "stomatal knot". producing conidiophores terminally and laterally ; conidiophores arising from external mycelial hyphae or from the loose mass of cell emerging through stomata fasciculate (upto 15), divergent, sometimes solitary, olivaceous to slightly olive brownish, simple or branched, erect or spreading on the substrate, septate (0-5), sinuous, a few geniculate, numerous scars on the surface,

scars generally towards apex, scars lying flat against the side of the conidiophores, apex rounded to conic, $9.5 - 39.5 \times 3.00 - 4.5 \mu\text{m}$; conidia obclavate, pale olivaceous, thin-walled, smooth pluriseptate (2-7), septa indistinct to distinct base tapers to hilum, apex rounded, $30.00 - 51.5 \times 4.5 - 6.00 \mu\text{m}$.

Specimen studied : On *Pithecollobium dulce* Benth., (fam. Leguminosae), Edengarden, Calcutta, West Bengal. IMI231240, leg. J.B. Ray, Nov. 15, 1977.

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