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Plant Pathology

FUNGI CAUSING SOME NEW DISEASES OF TWO IMPORTANT CROP PLANTS IN INDIA

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Hitherto unreported from India, two sooty mould diseases of mango and a severe leaf blight of an important vegetable crop *Colocasia*, are described.

INTRODUCTION

This note describes two new sooty mould diseases on the leaves of *Mangifera indica* L. var. "Bombay green" and a leaf spot disease in *Colocasia antiquorum* var. *esculenta* Schott. It forms the first report of the occurrence of *Fumago vagans* Pers. and *Microxyphium artocarpi* Bat., Nasc. and Cif. on Mango and *Cladosporium colocasiae* Sawada on *Colocasia* in India.

MATERIALS AND METHODS

Diseased leaves of mango and *Colocasia* were collected. Cotton-blue Lactophenol mounts of the fungi scrapped from mango leaves and of the hand cut sections of diseased *Colocasia* leaves were prepared.

RESULTS AND DISCUSSION

Microscopic examinations of the preparations revealed occurrence of *Fumago vagans* and *Microxyphium artocarpi* on Mango and *Cladosporium colocasiae* on *Colocasia*. The morphological characters of the pathogens isolated are given as under :

1. *Fumago vagans* Pers. in *Myc. Eur. I*, p. 9, *Tul. Carp. II*, p. 280 t. XXXIV, f2—3, *Cladosporium Fumago* Link sp. pl. *Fungi I*, p. 41, *Syncollesia foliorum* Ag., Torula *Fumago* chev. *I*, t. III, f-4, Sacc., Syll. *Fung.*, 4, 547, 1886.
(On the living leaves of *Mangifera indica* L. (Anacardiaceae), St. Anthony's Convent School campus, Gorakhpur, Jan. 1976, leg. Y. N. Srivastava).

The fungus incites appearance of black sooty masses on the leaves. These masses, on examination, revealed the presence of *Cladosporium herbarum* Link ex Fries and *Aureobasidium pullulans* (de Bary) Arnaud, growing together. Their association is referred to as *Fumago vagans*. Young hyphae of the former are 1.5-2μ wide, septate with septa at 12.5-17.5μ intervals. Older hyphae are olive brown with cells 12.5-15μ long and 3-8μ wide. Conidiophores are upright, unbranched, 17.5-18μ long, darker than hyphae, nodose geniculate at distal ends. Conidia are pale brown, 1-2 celled. 1 celled conidia are 5.5-10 $\times$ 2-3.5μ while 2-celled conidia are 7-10.5 $\times$ 2.5-5μ. The hyphae be-

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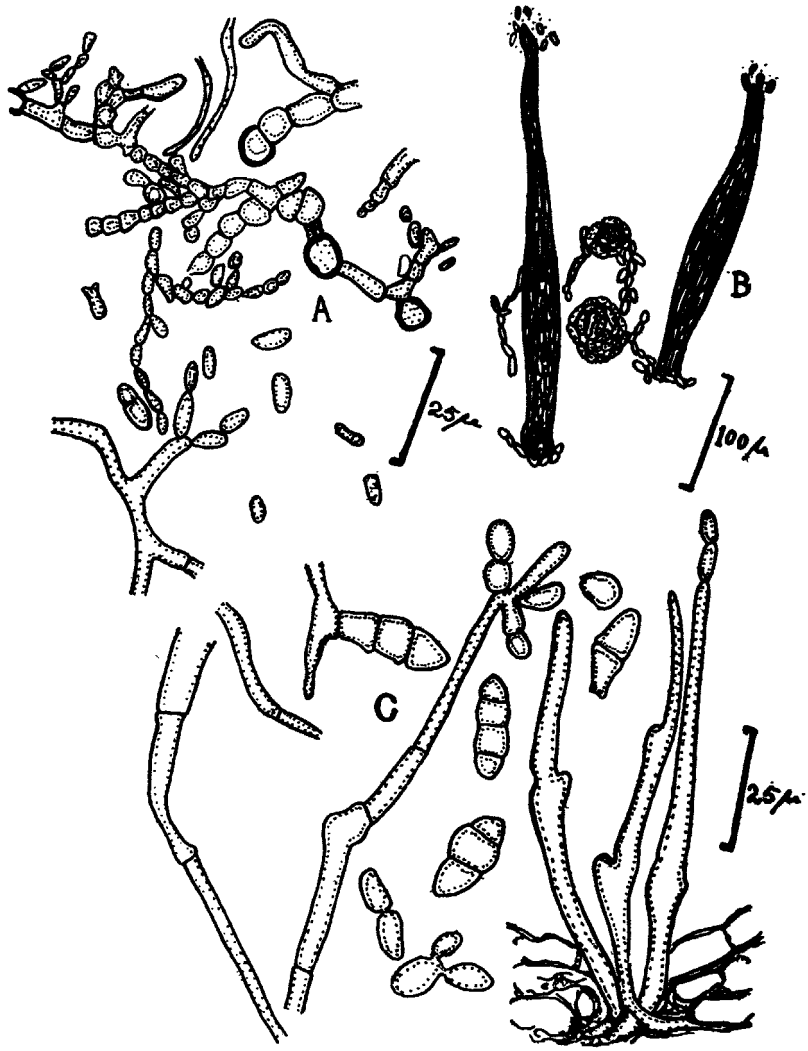

Fig 1. (A) *Fumagovagans; Cladosporium herbarum* and *Aureobasidium pullulans* growing together in close association (B) *Microxyphium artocarpi;* Hyphae, young and Old pycnidia and pycnidiospores; (C) *Cladosporium colocasiae;* Hyphae, conidiophores and conidia.

longing to *Aureobasidium pullulans* are greenish black, branched irregularly, with branches forming right-angle with parent hyphae. Cells are elongate to slightly spherical (2.5-7.5μ wide and 3-12.5μ long). Chlamydospores are thickwalled, ovoid-circular (4.5-9.5μ in diam). Some of them produce hyphal branches, with minute papillae-budding off hyaline, ovate, unicellular conidia (1.5-2.5μ wide and 2-5μ long). The hyphae of these two coinhabiting fungi are very closely associated and are separated with difficulty.

Mitter and Tandon (1930) recorded *Fumago* sp. on *Hibiscus esculentus* and Sahni (1964) observed it on *Ficus infectoria* and *Woodfordia fruiticosa* in India.

2. *Microxyphium artocarpi* Bat., Nasc. & Cif., in 'Asbolisiaceae', p. 114, 1963.
[On the living leaves of *Mangifera indica* L. (Anacardiaceae), St. Anthony's Convent School campus, Gorakhpur, January 1976, leg. Y. N.Srivastava.]

The fungus incites black, epiphyllous surface coating on the leaves. Mycelium is superficial, hyphae are dense and irregularly branched, septate, with oblong-rounded, cylindraceous cells (5-8.5 × 4.57μ); young pycnidial initials are globular, 40-50μ in diameter. Mature pycnidia are clongated, dark black, 260-390μ long, 35-40μ wide in the middle, 20-22.5μ at base and 10 11μ wide at the apex. Slimy masses of pycnidiospore are produced at the ends of the pycnidial necks. They are hyaline, bacillar, mostly 5-6 × 2-3μ.

Sharma and Agarwal (1973) have recorded this fungus on *Acacia auriculaeformis* from India.

3. *Cladosporium colocasiae* Sawada in *Rep. nat. Hist. Ass. Formosa*, 25, (1916)
[On the living leaves of *Colocasia antiquorum* var. *esculenta*, Schott. (Araceae), Asuran, Gorakhpur, December 1975, leg. Y. N. Srivastava.]

The fungus incites yellow-dark brown, circular-oval spots (2-2.6 cm, in diam). Mycelium is well branched, septate at 20-55μ intervals and intracellular; Young hyphae are thinwalled and hyaline (3-5 μ in diam.); older hyphae are thickwalled, light brown and thicker (4-6 μ in diam.); conidiophores are of macronematous type 63-87μ long and 5-7.5 μ broad) and produced in fascicles of 3-7, arising from dark brown stromata erect, unbranched, nodose geniculate at distal ends; conidia are light brown, numerous in simple chains, polymorphus-globular, oval, oblong, obovate and fusiform, 1-4 celled, aseptate to triseptate, slightly constricted at septa, 1-celled conidia measure 8.5-10.2 × 3-7 μ, 2-celled 10-18.5 × 5-7.5 μ, 3-celled 20-22.5 × 4.5-10.5 μ and 4-celled 17.5-22.5 × 6.0-7.5 μ.

Ellis (1971) has reported the occurrence of this fungus in twelve countries, other than India.

The diseased specimens of *Mangifera* and *Colocasia* have been deposited in the Herb. I. M. I., at Nos. 201035 and 201033, respectively.

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