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ABNORMAL ISOLATES OF SEED-BORNE *COLLETOTRICHUM TRUNCATUM* (SCHW.) ANDRUS AND MOORE FROM INDIA

DURING a study of seed-borne infections of *Phaseolus aureus* Roxb. (Mung bean) and *P. mungo* L. (Urid bean) from the seed samples of Haryana and Uttar Pradesh a few abnormal isolates of *C. truncatum* were isolated.

About 400 seeds of each sample were incubated on blotters and 2% P.D.A. at 20° C (± 1°) under 12 hours alternating cycles of NUV light and darkness as recommended by International Rules of Seed Testing[1]. After seven days of incubation the acervuli of the fungus were visible on the seeds as blackish irregular areas with 6–10 dark brown filliform setae. Minute, dull white, to almost white, conidial masses appeared intermingled be tween the acervuli. The conidia of the fungi were hyaline, falcate to lanceolate in shape. The mycelium was well developed forming sclerotial aggregates abundantly. The acervuli showed a tendency to coalesce sometimes covering the entire surface of the seeds.

On P.D.A. the colonies were dark brown to black in colour with septate branched mycelium. The individual acervuli were hemispherical to truncate conical, measuring 150 $\mu \times 250\ \mu$. The setae were long, 1–3 septate dark brown to almost black about 60–300 μ long and 3·5 to 8 μ wide. Immature acervuli were greyish white to dull orange in colour while matured acervuli were dark brown to black. The conidia were hyaline, falcate to lanceolate measuring 16–20 μ in length and 3·0–3·5 μ in width.

The gross morphology of the isolates was close to that of *Colletotrichum truncatum* (Schw.)[2]. However, in comparison to that species, the isolates were slow to sporulate, their conidia were at the lower end of the size range (16–20 μ in length × 3·0–3·5 μ in width; normal range 17–32 μ in length × 3·5–4·0 μ in width and the mycelium showed a greater tendency towards the formation of sclerotial aggregates. The cultures are deposited at Commonwealth Mycological Institute, Kew, England.

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OCCURRENCE OF THREE NEW ROT DISEASES OF STORED GARLIC (*ALLIUM SATIVUM* L.)

A FEW rotten bulbs were observed in garlic from the market. The diseased garlic bulbs were yellowish-brown in colour, and light in weight as compared to the healthy bulbs. For isolation of causal organisms, the small bits of surface sterilized diseased bulbs were plated on Czapek's Dox agar media and incubated at 28° C (± 2° C) for one week. The fungi were purified following Ricker and Ricker[3] and the pathogenicity was tested by the knife injury method of Tandon and Mishra[4]. Superficial cuts were made with sterilized scalpel on surface sterilized healthy bulbs and then sprayed with spore suspension of the respective fungi. Uninjured healthy bulbs were also dipped in spore suspension for a few minutes and then incubated at 28° C (± 2° C). The pathogens were reisolated from these diseased tissues of inoculated bulbs and compared with the test organism. Corresponding controls were also maintained.

Three fungal species, *viz.*, *Cephalosporium curtipes* Saccardo, *Fusarium camptoceras* Wollen Weber and Reinking and *Penicillium paxilli* Bainier produced rots on healthy garlic bulbs through injury. It appears that these fungi are 'wound' pathogens.

All the three fungi produced dry rots which were preceded by maceration of affected tissue, shrinkage

and ultimate death. *Fusarium camptoceras* caused brown rot, formation of deep fissures coupled with intensive maceration and drying of the affected tissue. The internal portion of the bulb turned complete brown with spurt of mycelial growth and the whole bulb was destroyed 12 days after inoculation. No sprouting was recorded.

Cephalosporium curtipes induced pinkish rot and two-thirds of the bulb deteriorated almost completely in 12 days time. Shrinkage of the tissue and severe maceration was evident both superficially and deeply. A little bit of sprouting was noticed which soon collapsed.

Penicillium paxilli caused darker yellowish dry rot with shallow fissures. The affected portion was soon covered with green mass. The advancement of the rot was extremely slow in terms of radial and vertical growth of mycelia but maceration and shrinkage of tissue was evident in those areas also where no fungus mycelium could be traced indicating thereby, that some toxic substance with faster diffusion capacity is involved in its pathogenesis. In twelve days time, only one-third of the bulb showed fungal growth, whereas half of the bulb was visibly affected by some diffusible toxic substance. The inoculated bulbs still exhibited considerable germination capacity but the germling finally collapsed and never reached maturity.

In terms of overall severety, *Fusarium camptoceras* was most actively involved whereas *Cephalosporium curtipes* was moderately pathogenic and *Penicillium paxilli* was least pathogenic.

Quite a good number of fungi, *viz.*, *Alternaria*, sp., *Aspergillus* sp., *Cercospora* sp., *Colletotrichum* sp., *Fusarium oxysporum* f. cepae, *Phyllosticta* sp., *Rhizopus* sp., *Pithomyces* sp., *Sclerotium* sp. and *Stemphylium* sp. have been reported to cause diseases on *Allium* spp.[1]. Recently Rangnathan *et al.*[2] have studied the varietal reaction of garlic to a new root rot caused by *Macrophomina phaseoli* (*M. phaseolina*) but so far none of the present three fungi have been reported to cause any sort of disease on garlic (*Allium sativum*) However, a white rot disease of stored garlic caused by *Sclerotium* sp. had earlier been reported from Kanpur[5].

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OCCURRENCE OF *CYLINDROCLADIUM SCOPARIUM* MORGAN ON LUCERNE IN INDIA

During disease survey of campus flora, the authors observed the occurrence of leaf-spot and stalk blight of lucerne (*Medicago sativa* Linn.), an important poultry feed grown in the dairy farm of the University of Agricultural Sciences, Bangalore, in December 1975. Though the damage done to the plant was very little, the infection of the host became obvious with prolonged wet weather. Microscopic examination of the diseased leaflets and stalks revealed the presence of abundant cylindrical, hyaline, 2–4 septate conidia and septate conidiophores characteristic of a hyphomycetous fungus.

In nature, the disease starts on leaflets as small, circular and brown, amphigenous spots measuring up to 3 mm in diameter. On stem, the lesions were noticed at the soil level, soon enlarge, coalesce and turn necrotic. The infection appears to originate from the soil and proceeds upwards involving the stalks and leaflets.

Repeated isolations on potato-dextrose-agar medium from the diseased leaflets and dead stems invariably yielded a pure culture of a species of *Cylindrocladium*. The mycelium was septate, hyaline, cottony white at first, becoming brown with age. Older hyphae formed chlamydospores which were brown, intercalary or terminal, single or in chains, sometimes in compact sclerotium-like structure. Conidiophores were macronematous, hyaline, branching at the apex to give a penicillate appearance, erect or flexuous, cylindrical at the tip prolonging to form a sterile appendage with swollen ends.

Conidia were hyaline, smooth, cylindrical, aggregated in slimy clusters, 2–4 septate and guttulate. Based on these characteristics the organism was identified as *Cylindrocladium scoparium* Morgan.

No perithecia were observed even though it was grown on five synthetic media (2% malt agar; Martin's Rose-Bengal agar; Fomes medium; Porter Pimaricin medium and Thornton's agar) and on steam