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COLLAR ROT AND WILT OF CLOVE SEEDLINGS INCITED BY *CYLINDROCLADIUM CAMELLIAE* Venkitaramani and Venkata Ram - A NEW RECORD FROM INDIA

Clove (*Syzygium aromaticum*[L]) is one of the most important ever green tree spices cultivated extensively in Kerala. The seed lots of cloves collected from the Horticultural Development Farm, Malampuzha, Palghat District were seen heavily infected by a fungal pathogen resulting in very poor germination. The seedlings obtained from this seed lot exhibited collar rot and wilt symptoms later. Therefore, detailed studies on the etiology, pathogenicity and symptomatology were conducted.

On the seeds, the infection begins as small reddish brown spots spreading and covering the entire seed surface. Later the seeds turn dark brown to black in colour and become rotten affecting the germination very seriously.

On young two week old seedlings, the disease manifests as small dark brown to black lesions at the collar region, eventually involving larger areas and resulting in collar rot and wilt symptoms (Fig 1). On split opening the affected stem, brown discolouration of vascular bundles also can be seen. Leaves of such infected seedlings show premature yellowing.

Isolation of the fungus was attempted using potato dextrose agar medium and repeated isolations yielded the same fungus. Inoculation of healthy seedlings produced typical symptoms in ten days time confirming the pathogenicity of the organism. A pure culture of the organism was sent to the Commonwealth Mycological Institute, Kew, UK for authentic-identification.

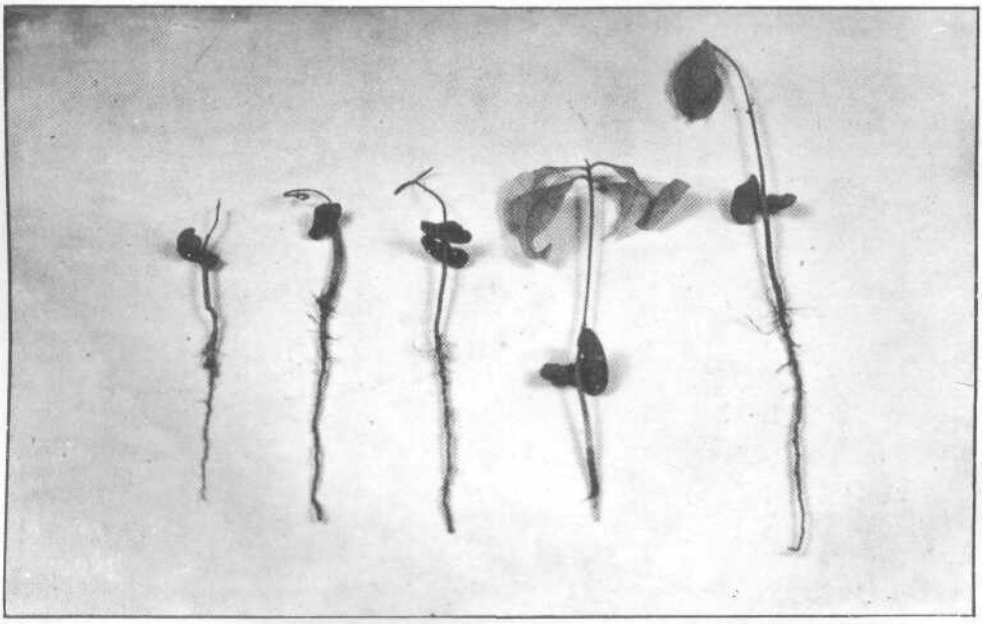

Fig 1. Clove seedlings infected by *Cylindrocladium camelliae*

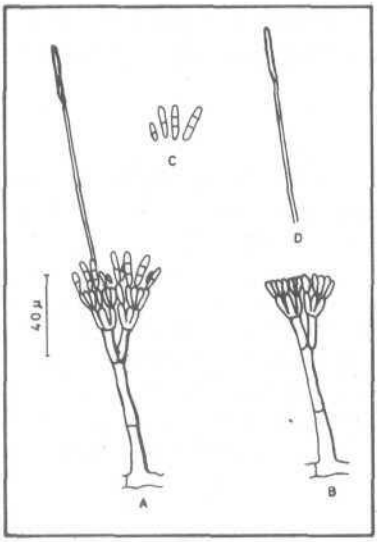

Fig 2. Conidial state of *C. camelliae*

(A: conidial state, B : conidiophore branches, phialides and conidia, C : conidia, D : vesicle)

Cultural and morphological characters of the fungus were studied. On potato dextrose agar, it yielded luxuriant whitish mycelium, turning reddish brown in 8-10 days. The mycelium was septate with penicillate branching of conidiophore and with sterile filament (Fig 2). The primary and secondary branches of the conidiophores were non-septate. The phialid sterigmata on the secondary conidiophores attached the cylindrical hyaline and septate conidia. Rarely, conidia were biseptate. The sterile filament was single, elongated and thick walled except for the vesicular region. The vesicle was lanceolate or ellipsoidal.

Based on the cultural and morphological characters, the fungal pathogen causing collar-rot and wilt in clove seedlings was identified as *Cylindrocladium camelliae* Venkitaramani and Vankata Ram. The identity of the fungus was confirmed by Commonwealth Mycological Institute (Herb. IMI Number 325959).

Cylindrocladium camelliae has been reported to cause disease in several hosts (Peerally, 1972; Rahman *et al.*, 1981 and Sharma *et al.*,1978). But there is no record of the fungus causing disease on *Syzygium aromaticum* so far. However, Wilson *ct al.(1979) and Sulochana et al.* (1982) have reported another species of the fungus C. *quinqueseptatum* causing leaf blight on clove. This is the first authentic record and report of the fungal pathogen *Cylindrocladiumcamelliae* causing collar rot and wilt on clove seedlings *Syzygium aromaticum*.

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