

## TWIG BLIGHT AND FLOWER SHEDDING DISEASE OF CLOVE TREES

During the course of a survey on the diseases affecting clove (*Eugenia caryophyllata* Willd.), a severe twig blight and flower shedding disease of mature clove trees was noticed in the District Agricultural Farm, Kozha, Kottayam District, Kerala during October–November 1978. The disease appeared in three distinct phases, namely, leaf spot, twig blight and flower shedding.

On the leaves, the disease initially manifested as small circular or oval-brown specks which were scattered all over the lamina. These specks gradually enlarged and developed into distinct spots with ashy-grey centres and darker margins. The adjoining spots eventually coalesced and formed irregular necrotic patches. In severe cases, the leaf margins and tips dried up (Fig. 1a). Later, the infection extended to the leaf petioles causing defoliation.

The infection also extended to the young twigs. The lesions on the twigs initially appeared as isolated brownish dots, which coalesced to form big patches (Fig. 1b). In severe cases, the affected twigs showed die-back symptoms.

The infection was also observed on the flowers which developed in serious proportions during periods of heavy and continuous rainfall. The first visible symptom appeared as blackening of the flower buds. Consequent on infection, the flower buds of all ages and their pedicels shrivelled and dried up. Immature buds were relatively more susceptible to infection. Whitish growth of the organism could be observed on fallen flower buds (Fig. 1c).

Isolations made from the infected portions of leaves, twigs and flower buds consistently yielded a species of *Colletotrichum*. The fungus grew and sporulated well on potato dextrose agar (PDA) medium.

The pathogenicity was proved by artificial inoculations on the leaves, twigs and flower buds and the same fungus was re-isolated from the infected parts.

The mycelium of the fungus is greyish-white initially, thin and sparsely septate. The conidia are hyaline and produced on simple conidiophores. The conidia are cylindrical, oblong, one celled and measured  $12.58\mu$  to  $17.90\mu$  long and  $3.58\mu$  to  $4.47\mu$  broad.

The characters of the fungus agree with those reported for *Colletotrichum gloeosporioides* enumerated by Mordue (1971) and hence these were identified as *Colletotrichum gloeosporioides* Penz.

A perusal of literature revealed that *Gloeosporium* leaf spots of clove seedlings were reported by Van der Goot (1936) from Dutch East Indies and Jose and

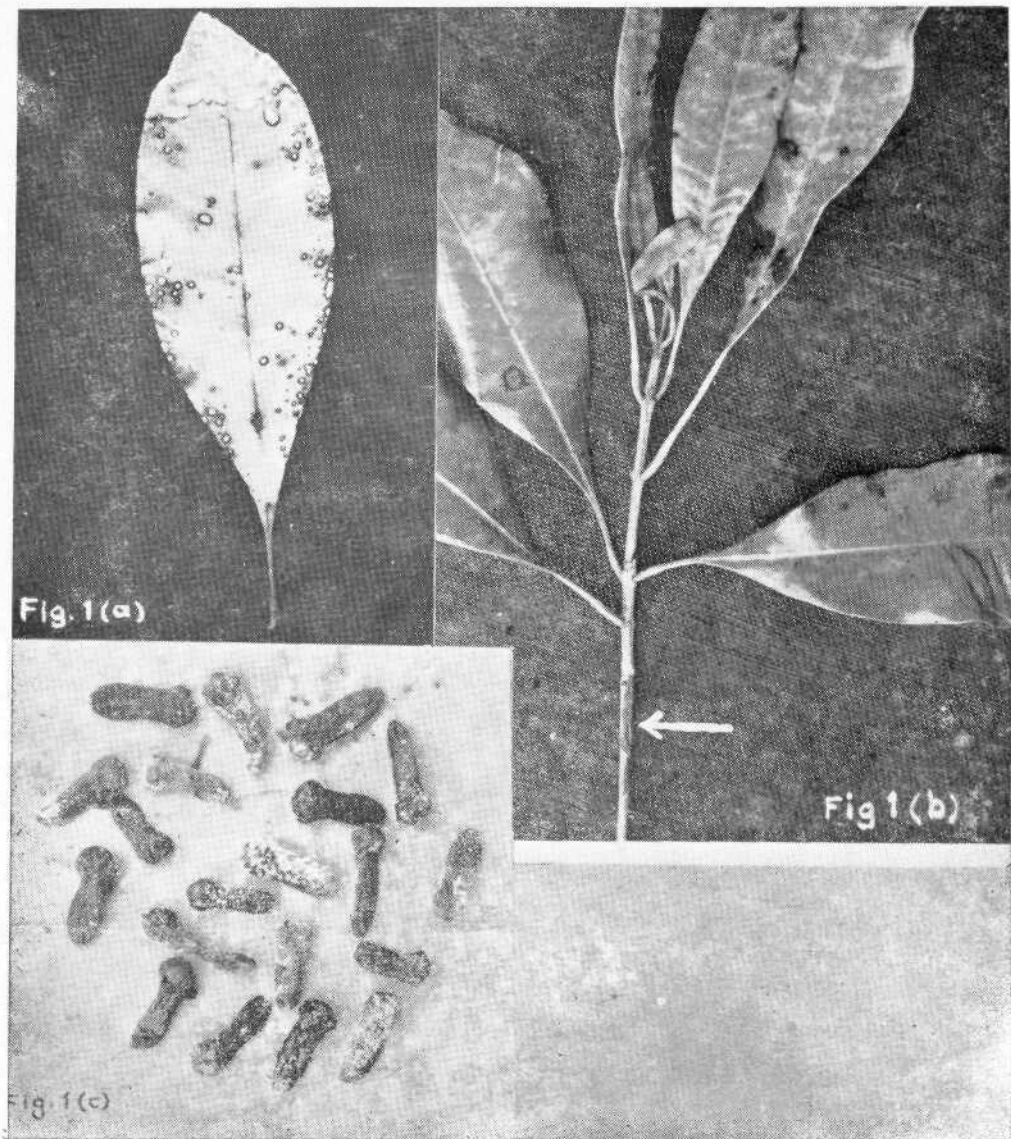


Fig 1 *C. gloeosporioides* incidence on clove  
(a) Symptoms on leaf and petiole  
(b) Symptoms on twig  
(c) Growth of the organism on the fallen flower buds.

Pailey (1966) from Kerala, India. Reitsma and Sloof (1950) reported leaf disease of clove seedlings caused by *Gloeosporium piperatum* from Indonesia.

There are no previous reports of twig blight and flower shedding of clove trees by *Colletotrichum gloeosporioides* Penz. and this constitute the first record.

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#### സംഗ്രഹം

ഗ്രാമ്പൂവിന്റെ ഇല, തണ്ടും, പൂമൊട്ട് എന്നീ ഭാഗങ്ങൾക്കു ഗണ്യമായ നാശം വരുത്തുന്ന ഒരു കമിരോഗം കോട്ടയം ജില്ലയിലെ ചില പ്രദേശങ്ങളിൽ കാണുകയുണ്ടായി. കോളി റോക്ലാഡിയം ത്ളിയോസ്പോറിയോയിഡം എന്ന കമിരം നിമിത്തമുണ്ടാകുന്ന ഈ രോഗം ആദ്യമായി കാണുന്നത് ഇലങ്കളിലെ പുള്ളിക്കുത്തുകളായിട്ടാണ്. ക്രമേണ ഇലഞ്ഞുവഴി തണ്ടിലേക്കു വ്യാപിക്കുമ്പോഴേക്കും ഇലയും തണ്ടും ഉണങ്ങുന്നു. രോഗബാധിതമായ പൂമൊട്ടുകൾ ധാരാളമായി കൊഴിഞ്ഞുപോകുന്നതുമൂലം കനത്ത നാശമുണ്ടാകുന്നു.

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