

White thread blight of Cacao in India

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Cacao (*Theobroma cacao* L.) is cultivated mainly in Kerala, Karnataka and Tamil Nadu. During a survey in South-West monsoon period of 1981 (June-September), some of the cacao plants in the cacao-areca mixed gardens in Dakshina Kannada (Karnataka) and Kottayam (Kerala) Districts were found to be affected by a thread blight disease.

The young branches of the affected plants contained white mycelial threads of the fungus which spread longitudinally and irregularly along the surface of the stem (Fig 1). The threads varied in thickness from as thin as a hair to around 0.6 mm. The growth of the fungus was very rapid on the stem under favourable condition of high humidity and entered the leaf at the nodes along the petioles. On the leaf lamina again it extensively spread in the form of a much branched system of fine threads. The fungus invaded the cortical tissues which eventually turned dark brown to black. The affected leaves also turned dark brown. These dead leaves in a branch eventually got detached from the stem, but were found suspended by the mycelial thread in a row. The extensive death of the young branches and suspended leaves in rows were the common field symptoms (Fig. 2).



Fig. 1. Cacao stem, showing the highly branched mycelial thread of *Marasmius scandens*

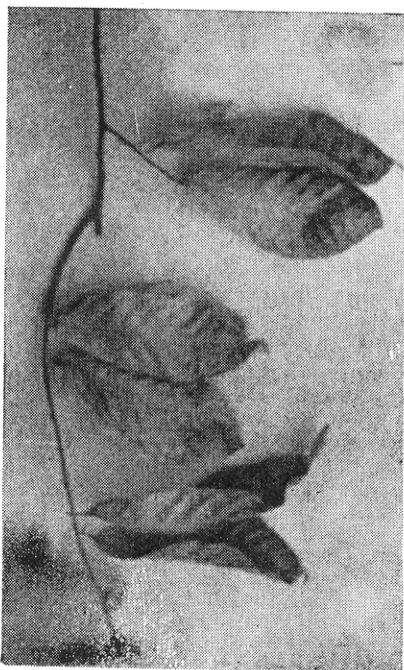


Fig. 2. White thread blight of cacao: a branch showing dead leaves suspended by the mycelial thread in a row.

The fungus was neither sporulating nor fruiting. The disease spreads from plant to plant as well as to different branches of the same plant through the inoculum of the mycelium from the earlier affected parts of the plant. The dead leaves with the mycelial mat could be easily carried by wind on to the leaves and stems of healthy plants and initiate the disease under favourable conditions of high humidity and rainfall. The pathogenicity has been established on 8–10 year-old cacao plants of Forestero variety which is extensively cultivated in India.

The symptoms of the disease and the observation of the pathogen indicate that it is the white thread blight caused by *Marasmius scandens* Masee¹. A perusal of available literature² revealed that this fungus has not been recorded earlier either on cacao or on other cultivated crops like tea, coffee, rubber, nutmeg etc., from India. This disease differs from horse-hair blight (*M. equicrinis* Muell.) on cacao, which forms a tangle of black threads through the canopy of leaves¹. *M. equicrinis* Muell. has been reported on tea from India⁴.

White thread blight was found to be more severe under conditions of heavy rain fall and high humidity¹. This disease has been reported to occur in the southern states of America, Gold Coast and West Indies on various cultivated crops like cacao, tea, coffee, rubber, nutmeg, camphor etc.¹ The disease has been observed in more or less severe form in some of the plantations in Ghana during 1969³.

¹Briton-Jones, H. R. *The diseases and curing of cacao*. Macmillan & Co., Ltd., London, (1934).

²Bilgrami, K. S., Jamaluddin and M. A. Rizwi. *Fungi of India Part I*. Today and Tomorrow's Printers & Publishers, New Delhi, (1979).

³Leston, D. *PANS* 16 : 516-517, (1970).

⁴Tunstall, A. C. *Quart. J. Ind. Tea Assoc.* 1 : 37-44, (1925).

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