



STUDIES ON THE LOW-COUNTRY STEM CANKER DISEASE  
OF TEA IN SRI LANKA

by

PAUL V. ARULPRAGASAM  
B.Sc. (Madras), M.Phil. (Lond)  
F.I.Biol. (SL)

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**ABSTRACT**

Brief reviews have been made on the literature pertaining to Branch Cankers, with special reference to Macrophoma cankers in tea and of the literature on Botryodiplodia theobromae.

Inoculation experiments with B. theobromae showed that this fungus by itself can cause stem cankers in tea and that simultaneous inoculations with Macrophoma theicola enhanced the development of Macrophoma cankers. It is inferred, therefore, that B. theobromae plays a synergistic role in the canker syndrome of the low-country stem canker disease of tea.

There were no distinct bio-types in the isolates of M. theicola that were studied. The fungus did not sporulate in pure culture and required the presence of a bacterial contaminant for sporulation.

Physiological studies showed that the optimum pH and temperature ranges for the growth of M. theicola in culture were 4.0 - 5.0 and 28° - 31°C respectively. Its inability to utilize cellulose and its ability to use all forms of nitrogen, along with the above properties, conform to the natural characteristics of the disease.

Increase in incidence of the disease was found to be related to changes in environmental conditions and cultural practices. Moisture stress and the planting of susceptible clones, specially TRI 2023, increased the incidence of the disease. No clone was found to be resistant to the disease under conditions of severe moisture stress.

Moisture stress conditions were aggravated by the lack of shade and the failure to provide adequate thatch during dry periods. Study of the meteorological data revealed that there had been an increase in the frequency of dry spells and a decrease in rainfall in recent years.

Moisture stress and the application of high levels of nitrogen fertilizers were found to decrease the C/N ratio of the bark tissues to levels which were favourable for the growth of the fungus. The application of systemic fungicides, specially of the EBI group, was shown to decrease disease incidence to a significant extent.

Infection of the collar and main branches of young tea, which results in premature death, was prevented by adopting moisture conservation measures and by the periodic use of systemic fungicides.

The results of the present study showed that by planting less susceptible clones on good soil, with adequate moisture conservation measures together with the judicious use of systemic fungicides, the incidence and the severity of the disease could be minimized.