SOME EFFECTS OF THE PRESENCE OF TREES ON TEA PLANTATIONS IN SRI LANKA ON BLISTER BLIGHT DISEASE OF TEA CAUSED BY *EXOBASIDIUM VEXANS* (MASSEE)

By

SIRIKKATTUGE RIENZIE ARTHUR FERNANDO

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University of Sri Lanka

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ABSTRACT

A major disadvantage in planting shade trees in tea plantations is the favourable effect trees would have on blister blight disease caused by Exobasidium vexans. Massee. Presently, in Sri Lanka, tea is grown at the higher elevations generally without shade. However, in the future it may become necessary to plant trees on tea estates to meet the needs of firewood and timber for the tea industry as well as for their beneficial effects on tea. In this context it is important that sufficient knowledge on the effects of trees on the disease be obtained. Considerable data is available on Blister Blight under unshaded field conditions. Very little work appears to have been done, however, on Blister Blight under shaded conditions.

The main objective of the present study was to determine quantitatively the changes in infection of tea plants by E.vexans, brought about by the presence of trees growing among them.

The effects of shade on the germination of spores of E.vexans deposited on the leaves of excised tea shoots and the susceptibility of these shoots to infection by the pathogen were studied in laboratory experiments. The

effects of shade trees on the incidence of Blister Blight was studied in a statistically designed field experiment.

The germination of spores was found to increase with increasing density of shade, and decrease with increasing age of leaves. More appressoria were formed on 'sun leaves' than on 'shade leaves'.

In one method used to inoculate excised shoots with E.vexans although germ tubes and appressoria were produced, lesions were not obtained indicating the failure of infection on excised shoots, perhaps due to changes in the physiology of the leaf tissue following excision.

The incidence of Blister Blight as measured by infection on the third leaf was always higher on tea grown under shade in the field experiment. Shade in tea generally caused significantly more disease than unshaded tea provided that infection in unshaded tea was more than 20%. When it was less than 20% the differences in infection on tea with and without shade trees was less noticeable.