STUDY OF HIGH SHADE TREES (*Gravillea robusta*) ON MICRO CLIMATE OF A TEA FIELD

Ediriweera E.P.S.K. [1] **and Anandacoomaraswamy A.** [2]
[1] Department of Forestry & Environmental Science, University of Sri Jayewardenepura, Nugegoda.
[2] Division of Plant Physiology, Tea Research Institute, Talawakelle

Shade trees are widely grown in tea plantations in Sri Lanka to provide physical shade for tea during the dry weather. It also enriches the soil fertility by leaf fall. An investigation was carried out to quantify the radiation and canopy temperature around an eight year old 'high' shade tree *Gravillea robusta*. The measurements were made at hourly intervals from 9.15 am to 3.15 pm on January 13th, 1999. In addition, relative humidity was measured in the shaded and unshaded area.

The radiation was measured by a tube solarimeter and the canopy temperature was measured by infra red thermometer. The organic carbon content of the topsoil between two shade trees were measured at north-south and east-west directions at 2m intervals.

On a clear day the shaded area ranged from 12-15%, highest during the early morning and lowest during the noon. The canopy temperature under shade was 4-6^{0}C less than the unshaded area. There was a marginal difference in relative humidity between shaded and unshaded area. The relative humidity of the shaded area was marginally higher than the unshaded area in the afternoon. The organic carbon content ranged from 3-4%. A high value was found near the base of the tree and a low value was found midway in between the shade trees. The mean leaf area index of the *Grevillea* canopy was 6.9 and the canopy extinction coefficient was 0.21.