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EFFECT OF ABNORMAL LEAF FALL DISEASE CAUSED BY *PHYTOPHTHORA* SPP. ON THE YIELD OF RUBBER TREE

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Abnormal leaf fall disease was observed to cause 9 to 16 per cent yield loss in susceptible clones of *Hevea brasiliensis*, of 10 to 25 years age, when prophylactic spraying was skipped for one season. The disease adversely affected growth and bark renewal of the trees. The yield in the subsequent year was also affected adversely in unsprayed areas. The disease increased the plugging index and reduced the dry rubber content of the latex. Weed growth was more in the untreated plots.

Key words: Abnormal leaf fall disease, *Phytophthora* spp., Yield reduction, Yield components, Plugging index, Weed growth, Rubber.

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INTRODUCTION

Abnormal leaf fall caused by *Phytophthora* spp. is the most serious disease of rubber (*Hevea brasiliensis*) in Southern India (Mc Rae, 1918; Petch, 1921). This disease was found to cause yield loss of 38 to 56 per cent when trees of three clones were not sprayed in an experiment conducted three decades ago (Ramakrishnan, 1960). In an attempt to simulate the defoliating effect of this disease by clipping off the leaves from yielding trees to different canopy densities, yield was reduced by 23 and 31 per cent when the defoliation was 50 and 75 per cent respectively (Pillai *et al.*, 1974). Based on the observations of crop loss due to this disease at different regions over several years, the yield loss was predicted to be 30 to 50 per cent (Pillai *et al.*, 1980). Attempts to evaluate the actual crop loss and other physiological effects due to this disease have been meagre for which the present study was aimed at.

MATERIALS AND METHODS

In the absence of standard procedures, the assessment of crop loss due to the disease was made by comparison of paired plots at three locations by the method adopted by Wastie and Mainstone (1969). In Ranni, a 10 year old plantation of RRIM 600, in an area of 0.75 ha with 100 per cent tapping intensity, was given two rounds of motorised ground spraying, the first by mid-April and the second by mid-May using copper oxychloride (56% powder) in diluent oil (1 : 5 ratio) at the rate of 40 l per hectare. In Pathanamthitta, a 15 year old plantation of RRIM 600 in an area of 4.0 ha with 100 per cent tapping intensity was given aerial spraying using copper oxychloride (56%