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CROP LOSS DUE TO ABNORMAL LEAF FALL DISEASE OF RUBBER (*HEVEA BRASILIENSIS*) CAUSED BY *PHYTOPHTHORA* SPP.

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Evaluation of crop loss due to abnormal leaf fall disease caused by *Phytophthora* spp in rubber (*Hevea brasiliensis*) plantations of the clones RRIM 600, GT 1 and RRII 118 over 14 years revealed 31.66, 8.21 and 7.15 per cent loss respectively. No such loss was observed for the clone RRII 105 in the plantation in south western India. The mean leaf retention in clone RRIM 600 was only 14.32 per cent as against 54.82 in RRII 105. There was a significant and positive correlation between crop loss in the clone RRIM 600 and the leaf fall in the preceding two years. For RRII 105, the depression in yield during the disease season was compensated by the post wintering resurgence in crop production. The weather conditions had more pronounced effect on crop production in this clone than the disease incidence. The adverse effect of disease on the affected clones resulted in poor girthing and lower wood volume at felling. An increase in crop by 2 to 3 per cent compensates for the cost of spraying. Location specific recommendations of clones for disease avoidance could be a useful strategy for higher crop production.

Key words: Abnormal leaf fall, Clones, Crop loss, *Hevea brasiliensis*, Leaf disease *Phytophthora*, Wood volume.

INTRODUCTION

Abnormal leaf fall (ALF) disease caused by *Phytophthora* spp. is the most destructive disease of rubber in the traditional rubber-growing tract of South India necessitating crop protection every year (Edathil *et al.*, 2000). Early attempts to assess the crop loss due to this disease revealed losses of 37.68 to 50.46 per cent in the clones BD 5, Tjir 1 and Gl 1 (Ramakrishnan, 1960). Later, crop loss ranging from 9.27 to 15.75 per cent was observed in clones RRIM 600 and PB 86. (Jacob *et al.*, 1989). It was also observed that crop loss during the succeeding year of leaving an area unprotected exceeded that in the same year (Jayarathnam *et al.*, 1987). These estimations were based on short-term experiments extending only for one or two disease seasons/years and therefore could not estimate the carry-over effect of debilitation of trees due to the disease over several years on yield. This study was aimed at quantifying the overall crop loss in popular rubber clones widely cultivated in South India.

MATERIALS AND METHODS

The experimental clones consisted of three popular clones namely RRIM 600, RRII 105 and GT 1 planted in the Central

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