Indian Journal of Natural Rubber Research, 5 (1&2) : 245-247, 1992

EFFECT OF POWDERY MILDEW DISEASE ON THE YIELD OF RUBBER TREES IN KANYAKUMARI DISTRICT

Powdery mildew disease of rubber (*Hevea brasiliensis*) caused by *Oidium heveae* is known to be very severe in Kanyakumari district (Radhakrishna Pillai *et al.*, 1960) but the crop loss due to this disease has not been assessed. The present investigation was aimed at an evaluation of the impact of the disease on two popular clones in this district.

Two experiments were laid out following to paired plot design (Wastie and Mainstone, 1968) in Kanyakumari district in areas planted with the clones PB 86 (location I) and RRIM 600 (location II) during 1983 to 1986 and 1984 to 1987 respectively. Two blocks each of 280 trees planted in 1967 in the first location and four blocks each of 320 trees planted in 1973 in the second location were selected for the experiment. Sufficient guard rows were left in between the blocks. Tapping was on BO2 panel in the first experiment and BO1 panel in the second. All cultural operations except control measures against powdery mildew were carried out uniformly in all the blocks.

Pre-treatment yield was recorded during the first year and the treatments were imposed in the second year. In both the locations one set of plots was protected from powdery mildew disease by dusting sulphur (70% dust), using a power duster carried in every fourth row, at the rate of 12 kg per hectare, per round. Four rounds of dusting at 12-15 day intervals were carried out, the first round being done when bud break after wintering occurred in ten per cent of the trees. The other set of plots was kept unprotected. The blockwise yield and number of tapping days were recorded. Yield projection was made based on pre-treatment yield and crop loss was calculated based on the projected yield. Twenty five trees were selected on the basis of mean girth from each plot. Tree girth at a height of 175 cm from the bud union and thickness of renewed bark at a height of 1 m were recorded (using a Schlieper's gauge) annually.

The disease incidence was recorded using wirenet baskets of size 1 m^2 fixed at random in between the rows as well as between trees in a row. The leaves fallen due to infection by *O. heveae* were counted and expressed as percentage of the total number of leaves in the canopy. Leaf counts were done periodically during the disease season and the subsequent wintering period.

Severe defoliation of trees was observed in the control (unprotected) plots in both the experiments during the period of observation (Table 1). In the clone PB 86,7.7 to 11.8 per cent more disease incidence was noticed resulting in a crop loss of 20.1 to 31.8 per cent. The growth of the tree was also adversely affected when the trees were not protected as indicated by the poor girth

Presented in the International Natural Rubber Conference, 5-8 February 1992, Bangalore, India.