

GRAFTING FOR REPLACEMENT OF TPD AFFECTED BARK OF *HEVEA BRASILIENSIS*

Tapping panel dryness (TPD) is a serious problem in rubber plantations especially where high yielding clones are planted (Sivakumaran *et al.*, 1988). It is considered as a physiological disorder affecting the laticiferous system, extending to the other bark tissues of the affected side and is related to the intensity of tapping (Sethuraj *et al.*, 1977; Jacob *et al.*, 1994). Once occurred, no remedy is suggested other than leaving the tree to rest. A novel approach, to replace the affected bark with healthy one by grafting, was tried and the observations are reported in this paper.

Six TPD affected trees of the clone RRIM 600, under rest for two years, were selected from a clone trial laid out in 1977 at the Central Experiment Station of the Rubber Research Institute of India. On the diseased panel of each tree a 10 cm square area was marked and clean cuts, upto the cambium, was made at the sides of the square with a sharp chisel and left as such for a few minutes for the flow of latex to cease before debarking. An exactly similar area of donor bark was marked above the tapping panel of a healthy tree and clean cuts were made to the same depth. Latex was wiped out and debarking of the marked area was done with the help of the chisel. The donor bark was then collected and handled with utmost care to avoid bruising/contamination and was inserted to the debarked area of the recipient tree, pressed gently to get adhered to the wood and bandaged with polythene tapes having 10 cm width and sufficient length making

overlapping winds over the complete area of the donor bark. To keep the bark tightly in position it was tied with jute twine. The grafting was done in December 1993. The bandages were opened six months after grafting, in July 1994. One month after opening, final grafting success was noted and the grafted bark was opened for tapping. A cut of similar length was also opened on the resting portion of the panel, as control. Alternate daily tapping was followed. Observations on the bark were made and bark thickness was measured from four positions of the trunk *viz.* grafted, resting, renewing and virgin bark just above the tapping panel. The soft bast was differentiated from the hard bast by its colour and peeling quality at the active cork cambial zone.

One recording of yield was carried out in September 1994 and one more in the first week of December 1994. After the first recording, one more cut was opened on the resting panel and another round of yield recording was carried out from the three cuts simultaneously in December. Final observations of the trees were recorded in June 1996. Grafted bark as well as the resting bark panels were test tapped to examine the viability of bark and latex flow.

Cent per cent success of grafting was obtained. Hard bast region of the donor bark sloughed off when the bandages were opened and the inner bark had firmly attached to the tree (Fig. 1). TPD affected bark, under rest showed better peeling