F07:A Comparative cost analysis of fertilization for mature rubber

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The present fertilizer recommendation for mature rubber is based on 2 alternative methods *viz.* conventional (indiscriminate or pre-mixed) method and soil and foliar based (discriminatory) method. (RRISL, 1994). The Conventional system of fertilization has the advantage of using broad based Premixed fertilizer mixture available in the local market. The latter technique is presently being confined only to the estate sector. This approach estimates the correct amount of nutrients required by the rubber tree based on the location specific nutrient values determined by the Soil and Foliar survey carried out every 3 years. The quantity of certain nutrients recommended under the Soil and Foliar technique have often been observed as much lower compared to the conventional system. Yet, the yields achieved under both systems of fertilizer recommendations have been considered as more or less identical. However, a study has not been done to compare the cost of these 2 alternative fertilizer schemes. This study attempts to compare the cost of indiscriminate and discriminate methods of fertilizer application for mature rubber with particular reference to regional and clonal variations.

The study area consisted of mature rubber estates located in the 3 major rubber growing districts *viz* Kegalle, Kalutara and Ratnapura. These 3 districts represent 77% of the total rubber estates in the country. In addition, the above districts represent 3 different soil series. The sampling frame consisted of 2493 random observations (comprising 50 rubber estates, 137 Divisions and 735 replantings). The secondary data in relation to soil and foliar programme was extracted from time series records available at the Soils and Plant Nutrition Dept., RRISL within a time frame of 1974 and 1994.

The nutrient values recommended under the conventional (premixed) system are well documented. The cost analyses were done using computer programs: Lotus Spread Sheet and Statistical Analysis System (SAS).

The study clearly suggests that soil and foliar approach of fertilizer recommendation for mature rubber is more economic than the use of conventional premixed fertilizers. The difference in cost between the 2

schemes has been around Rs.1300/ha/year during the initial 12 years of tapping. The economic advantage of soil and foliar approach has reduced this to nearly Rs.1100/ha/year after the 13th year of tapping when compared with conventional method of fertilization.

Analysis on regional variations revealed that the soil and foliar approach has secured a net saving of Rs.1285, 1275 and 1365/ha/ year compared to the conventional system of fertilization in Kalutara, Kegalla and Ratnapura districts respectively.

The behavioural pattern of the fertilizer cost curves, recommended under the soil and foliar scheme has varied according to the type of clone. For instance, the clones RRIC 100 and RRIM 623 have utilized more nutrients than PB 86.

The discriminatory fertilizer recommendation based on soil and foliar nutrient survey is less costly than the conventional method of fertilizer application.

The profitability of the soil and foliar scheme appears to be more significant when exploitation is done in the virgin panel compared with latter stages of exploitation.

The regional variations associated in terms of fertilizer cost appear to be minimal.

The behaviour of cost curves of the soil and foliar approach has varied according to the type of clone where the high yielding clone RRIC 100 has consumed more fertilizers compared to the low yielding clone PB 86.