



EFFECT OF STIMULANT APPLICATION FOR RUBBER IN SMALL GROWERS FIELD: A CASE STUDY

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Trees of clone RR11 105 in a small growers field at Pookkottupadam in Nilambur were selected for the study. There were 550 trees in 1.21 ha opened for tapping in 1991 under d/2 frequency with polythene skirt rainguard. BO-1 and BO-2 panels were completed by 2000 (10 years) and in 2001, tapping commenced on renewed bark (BI- 1). The dry rubber yield obtained during 2000 (January to May d/2 and June to December d/3) without yield stimulation was 2418 kg/ha (124 tappings) compared with that in 2001-02 (d/3) with panel application of ethephon at 2.5 % twice during the year being 2737 kg/ha (95 tappings) The per tap yield under d/2 was only 10.9 kg/ha which increased to 17.5 kg/ha under d/3 (2000) and further to 28.8 kg/ha under d/3 with two stimulations per year, the overall increase being 319 kg (13 %). Annual average DRC was 37.8 per cent. From this study it is evident that regular d/3 frequency tapping with recommended method and dose of stimulation can result in good yield even on renewed bark, at lesser cost.

INTRODUCTION

Around 70 per cent of rubber cultivated area in India, and more than 80 per cent area in smallholdings, is planted with the clone RR11 105. Despite recommendation of once in three days (d/3 – 2 taps per week) tapping for high yielding clones like RR11 105, majority of the small growers are yet to adopt this system due to various socio-economic reasons. They are practicing d/2 frequency tapping and occasionally take up 4 – 5 tappings in a week with or without rainguarding during monsoon season. Such practices lead to very high incidence of tapping panel dryness (brown bast), panel exhaustion and ultimately a very short economic life of trees (13-15 years). The cost of production is also high. Rubber Research Institute of India recommended yield stimulation (3 rounds per year) with 2.5 % ethephon applied on young tissue (freshly tapped area just above the tapping cut) for clone RR11 105 under d/3 tapping. Considering the present day need of reducing

cost of production without any compromise in production, almost all large estates, majority of medium growers and even many small growers have adopted this recommendation. A case study in clone RR11 105 in a smallholding at Nilambur in Malappuram district is reported here to assess the impact of adoption of the new recommendation.

MATERIALS AND METHODS

The plantation (1.21 ha) is located at Pookkottupadam, (Chettipadam) Nilambur. The field was planted with 550 polybag plants of clone RR11 105, in 1984. The land with gentle slope, had well established cover crop (*Purearia phaseoloides*) and intercropping of plantain was done in the first year only. The plants were given irrigation during immature phase and fertilizer application was based on recommendations of RR11. The trees were opened during 1991 under d/2 frequency tapping with rainguard and continued under the same frequency upto May 2000, there after shifted to d/3 (from June 2000).



However, there was no yield stimulation during 2000. In the year 2001, the trees were stimulated two times with 2.5 % ethephon following panel application method during June and September. The wage rate for tapping was 30 paise per tree.

Yield recording was based on number of sheets and quantity of scrap produced in each tapping. The DRC estimation was based on sample sheet. Tapping panel dryness was recorded annually.

RESULTS AND DISCUSSION

The yield obtained during 2000 (January to May under d/2 frequency, and June to December under d/3) without yield stimulation and that in 2001-02 (d/3) with mild application of ethephon at 2.5 % (panel application, 2/year) is presented in Table.1.

The dry rubber yield during 2000 was 2418 kg/ha (705 kg under d/2 and 1713 kg under d/3 without stimulation) from 124 tapping days. The per tap yield during the year was 19.5 kg. Yield during 2001-02 had increased to 2737 kg/ha from just 95 tapping

Table 1. Dry rubber yield (kg/ha)of RR11 105 for the year 2000 to 2002

Month	Dry rubber	Month	Dry rubber
January 2000	182	April 2001	11
February	178	May	115
March	134	June *	256
April	113	July	261
May	98	August	175
June	205	September *	314
July	218	October	202
August	97	November	243
September	140	December	223
October	144	January 2002	134
November	87	February	97
December	140	March	47
Scrap	682	Scrap	660
Total	2418		2737
Tapping days/year	124		95
Yield per tap (kg/ha)	19.5		28.8

*Stimulation with 2.5 % ethephon as panel application

days by giving two rounds of stimulation with a per tap yield of 28.8 kg. The increase in yield was 319 kg (3 per cent). Scrap percentage was slightly high (20-25%). This can be reduced to acceptable limits of 10-15% either by second collection/ delayed collection and also by introducing payment of incentives for latex to tappers. The annual average drc was 37.8 per cent which shows the metabolic vigour of the plant throughout the year. As a result, TPD percentage was as low as 1.3 per cent.

Cost benefit analysis of the tapping systems were carried out with the assumption that rubber price is Rs 30 and that of scrap is Rs 18 per kg and is presented in Table 2.

Table 2. Cost benefit analysis for the year 2001-02 under d/3 frequency

Yield increase over unstimulated control	319 Kg
Additional income from latex at the rate of Rs. 30/kg dry rubber and Rs. 18/kg of dry scrap	Rs 9186.00
Saving on tapper wages (450 trees x 0.30= Rs135 x 29 tappings)	Rs 3915.00
Total income	Rs 13,101.00
Cost of processing (Rs 3 x 319 kg)	Rs 957.00
Cost of stimulation (2 rounds)	Rs 120.00
Total expense	Rs 1077.00
Net additional income/ha/year	Rs 12,024.00

Thus the total additional income was Rs 13,101/- and expenditure was Rs 1077 (processing, stimulation etc.). The net profit to the grower was Rs 12, 024/ha/year by introducing the new system. The latex out put and the profit could have been further improved by providing incentives for latex collection.

It is evident from this study that regular d/3 frequency tapping with two rounds of stimulation at recommended method and dose can result in good yield even on renewed bark, at lesser cost. It may be possible to get a still higher yield if the recommended three rounds of stimulant application, is followed. This needs further investigation in the growers field. ■