

THE CROP LOSS DUE TO WET WEATHER AND METHODS TO OVERCOME IT

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In Sri Lanka, Rubber cultivations are mainly found in the South Western part of the country. In this region the annual rainfall is above 2000 mm and it is well distributed over the year. Such conditions are ideal for field establishment and subsequent growth of the rubber plants. Nevertheless, a high and a well distributed rainfall is a hindrance for tapping. Tapping of wet panels result in panel diseases. Further, the latex flow is disturbed resulting in loss of latex. The mean number of tapping days recorded during the year 1998 in some rubber growing areas are given in Table 1.

Table 1. *The mean number of tapping days recorded during 1998 in some rubber growing areas (NT= normal tapping; LT=late tapping; WO = washouts; NOT = no tapping)*

Area	NT	LT	WO	NOT
Kurunagala	233	41	7	84
Kegalle	223	37	26	81
Avissawella	212	64	12	76
Galle	207	48	6	108
Kalutara	204	55	13	91
Ratnapura	198	65	5	96

The crop loss on a late tapping (LT) and a washout (WO) day is ca. 25 and 50% respectively. Accordingly, the annual loss in crop can be calculated for different rubber growing areas using data given in Table 1 (Table 2).

The percentage loss in crop is lowest in the Kurunagala area. It is quite significant in other areas and varies from 27 to 32%. In both the Plantation and Smallholder Sectors this results in poor productivity, total production and profitability. Tappers are daily wage earners and this erodes their income levels considerably.

Table 2. The crop loss due to wet weather as a percentage of the potential annual crop

Area	% Loss in crop
Kurunagala	15
Kegalle	28
Avissawella	27
Galle	34
Kalutara	31
Ratnapura	32

Methods to overcome loss tapping days:

As pointed out above, wet weather significantly affects the process of tapping. Therefore, numerous methods are adopted in both Plantation and Smallholder Sectors to overcome this problem.

Grooming

Mosses grow on the bark of some rubber trees and they are capable of retaining moisture. The moisture is released slowly and as a result a longer time is taken for the panel to dry even after the rains have ceased. If the mosses found surrounding the tapping cut are removed it helps to dry up the panels quickly. Removing the mosses from an area 2' above the cut and about one foot on either side and below the cut will be sufficient for this purpose. This process, i.e. Grooming, should be undertaken annually, before the onset of monsoons on trees where mosses are found. This helps recover and cut down the late tapping days. In some clones, eg. RRIC 121, mosses do not grow on the trunk of the tree.

Recovery tapping

Ideally a rubber tree should be tapped every other day or once in three days depending on the clone. Anyhow, to recover the lost tapping days daily tapping is undertaken during dry months, i.e. recovery tapping. As daily tapping negatively affects the growth and yield of the trees it is not recommended during early years of tapping, i.e. first three years. In clearings where recovery tapping is recommended only 2 and 6 such tappings are recommended per week and per month respectively. Anyhow, many Plantations and Smallholders exceed the permitted number of recovery tapping days.

The yield potential of a rubber tree varies with the time of the year. It is lowest during February to May, moderate during June to September and highest

during October to January. Table 3 gives the variation in yield potential during the different cropping periods for two Estates, *i.e.* Estate 1, where excessive recovery tapping was undertaken and Estate 2 with no recovery tapping practiced. The yield variation between cropping and non cropping months is very significant in Estate 2 where no recovery tapping is undertaken. In order to estimate the yield gain from recovery tapping the total crop harvested during the period October to January was calculated for Estate 1 under two scenarios, *i.e.* with and without recovery tapping (Table 4). It is apparent that, the yield gain with 40 additional tappings will be only 58 kilos. This situation results in a higher tapping cost (Table 5). Furthermore, recovery tapping lowers the quality of tapping, *i.e.* excessive bark consumption and incorrect slopes, depths and lengths of cut.

Table 3. *Yield variation within a year in an Estate with, i.e. Estate 1 and without, i.e. Estate 2 recovery tapping*

Estate	Cropping Period & Intake/Tapper (kg)		
	February - May	June - September	October - January
1	4.4 (100)	4.9 (111)	5.2 (118)
2	4.7 (100)	6.0 (128)	7.1 (151)
1*	4.4	5.6	6.7

1* = Estate 1 yield, if yield increments of Estate 2 is achieved.

Table 4. *Total crop harvested from Estate 1 during the period October to January (O-J) under two scenarios, i.e. without (No RT) and with (RT) recovery tapping (NT= normal tapping days, DT= double Tapping days)*

Cropping Period	Scenario	Crop (Kg)		Total
		NT*	DT**	
O - J	No RT	670 (6.7 x 100)	00	670
	RT	520 (5.2 x 100)	208 (5.2 x 40)	728
Additional Crop				58

* 100 days

** 40 days

Table 5. *Tapping cost per Kg of rubber in Estates with and without recovery tapping based on data of Table 4*

	Without Recovery Tapping	With Recovery Tapping
Crop (kg)	670	728
Total Tapping Cost (Rs.)	100 x 110*	(100 x 110) + (208 x 12)**
Tapping Cost (Rs./kg)	16.00	18.50

* Daily wage = Rs.110.00

** Double Tapping Rate = Rs.12.00/kg

Rotation Tapping:

In addition to the normal tapping gang another tapping gang is employed for tapping. If an additional 25% of tappers are used in the second tapping gang, each tapping block will get an additional tapping once in about 8 days. This system may not be practical at present due to the scarcity of skilled tappers. Further, this method also results in daily tapping of a tree to some extent.

Use of Rainguards:

An apron type rainguard will protect the tapping panel from the water seeping along the trunk and the water splashing from side ways. Therefore, with properly fixed rainguards a significant number of tapping days can be recovered (Table 6). In order to get the maximum from the rainguards it is very important to adhere to the recommended action plan each year (Table 7). The number of additional tapping days needed to recover the cost of a rainguard depends on a) the yield potential of trees b) rubber prices c) cost of tapping and manufacture and the d) cost of rainguard. It is evident that even with a moderate price and a yield potential an additional 10-11 days of tapping is sufficient to cover the cost of the rainguard (Table 8). Therefore, with about 70 additional tapping days possible per annum (Table 6) the Plantation Companies, Smallholders and the Tappers will benefit immensely. The total cost of fixing rainguards in an Estate could be minimised by leaving out uneconomical clearings and also by leaving out poor yielding trees in the economically yielding clearings. Unlike with recovery tapping, with rainguards, tapping is systematic, *i.e.* according to the recommended tapping frequency. Use of rainguards will have other advantages such as a) improving the quality of latex b) an un-interrupted supply of latex to enter into forward contracts c) protecting the panel from diseases like bark-rot and d) efficient use of yield stimulants.

Therefore, it is evident that amongst the different systems adopted, use of rainguards is the most economic and both tree and tapper friendly method of minimising the ill affects of wet-weather on tapping.

Table 6. *The number of tapping days with and without the use of rainguards (Dartonfield Estate 1996)*

Tapping days	Rainguards	
	With	Without
Normal	316	234
Late	11	50
No	38	81
Crop lost (days)	42	94
Crop lost (%)	12	26

Table 7. *Action plan for implementation of rainguards in Estates*

Month	Work Item
December	Identifying fields, ordering material
January	Training programmes for preparation of sealant and fixing of rainguards
February	Preparation of Sealant and Polythene.
March	Fixing Rainguards
April	Fixing Rainguards
May – December	Tapping in all possible days. Identifying and Repairing leaks, if any

Table 8. Factors affecting the feasibility of using rainguards

Net Sale Average/kg	= Rs.55.00
Tapping + Manufacture Cost/Kg	= Rs.(18.00 + 9.00)
	= Rs. 27.00
∴ Profit/Kg	= Rs. (55-27)
	= Rs.28.00
Cost of Apron type Rainguard (RG)/Tree	= Rs.8.00
Additional Crop to cover RG Cost/tree	= (100/28 x 8) g
	= 286g
Additional tapping days to harvest 286 g/tree	
If g/t* = 25; 286/25	= 11 days
If g/t* = 35; 286/35	= 8 days
Factors Determining Profitability	
• NSA	
• Tapping and Manufacture Cost	
• Cost of RG	
• Wet Days	
• Yield potential of trees	

*grams per tree per tapping (g/t)