

Introduction

A planter's experience with disease outbreaks and the challenges to achieve productivity targets.

By

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Sdn Bhd

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Peninsular 
Forest Management

Introduction

- The rubber plantation project site is located about 60 km to the North of Kuala Lumpur, 20 KM from the town of Kuala Kubu Bharu, Selangor and about 10 km south of Tanjung Malim Perak town, hugging both sides of the north-south highway.
- The best access to the area is through the highway exit at Lembah Beringin Selangor, a semi-abandoned township bordering the rubber plantation.
- Currently, the plantation has successfully planted 1,530 Hectares of rubber (TLC), Planted from 2009 to 2011. The clones which are currently planted are as such: –

No	Clone Planted	Percentage %	Year Planted
1	PB 350	76%	2009 -2011
2	PB 260	13%	2010
3	RRIM 2025	5%	2010
4	RRIM 3001 (1 Malaysia)	3%	2010
5	RRIM 901	3%	2010



Rainfall

Rainfall Data By Year From January 2017 to May 2020 For Lembah Beringin, Selangor Malaysia

Year	Raining Days	Not Raining	Rain MM
2017	184	181	3,381
2018	186	179	3,121
2019	173	192	2,911
January 2020 to May 2020	64	302	1,381



Rainfall Data Capturing is very important

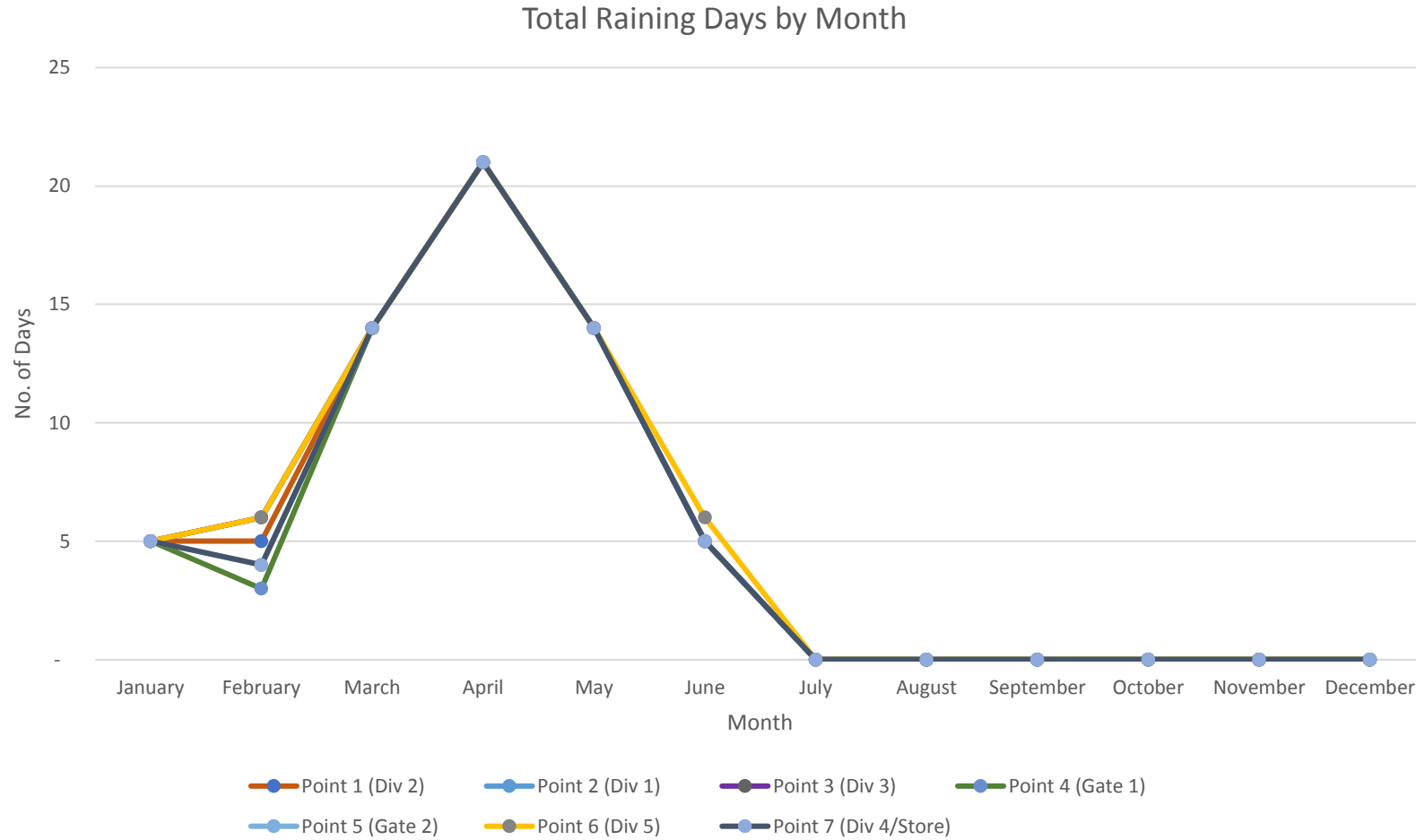
Rainfall

Rainfall Data By Month From January 2017 to May 2020 For Lembah Beringin, Selangor Malaysia

<u>Month</u>	2017		2018		2019		2020	
	<u>Raining Days</u>	<u>Rainfall (mm)</u>	<u>Raining Days</u>	<u>Rainfall (mm)</u>	<u>Raining Days</u>	<u>Rainfall (mm)</u>	<u>Raining Days</u>	<u>Rainfall (mm)</u>
January	14	346	16	308	12	147	5	237
February	9	260	6	45	14	152	5	105
March	23	542	12	209	10	94	14	191
April	21	380	14	147	16	221	21	329
May	18	426	22	443	14	320	14	363
June	10	176	9	174	12	347	5	155
July	6	90	7	137	11	180	0	0
August	16	105	6	83	12	160	0	0
September	17	153	26	422	10	166	0	0
October	13	206	25	431	27	621	0	0
November	19	412	22	390	18	343	0	0
December	19	285	21	331	17	160	0	0
Total	184	3,381	186	3,121	173	2,911	64	1,381

Rainfall

Rainfall Chart By Month From January 2017 to May 2020 For Lembah Beringin, Selangor Malaysia



Rain Gauge (250 mm)

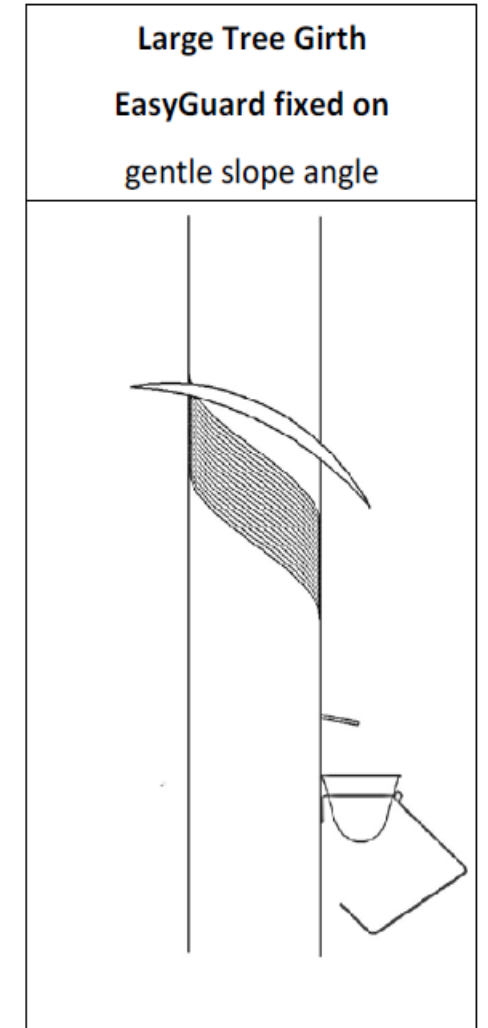
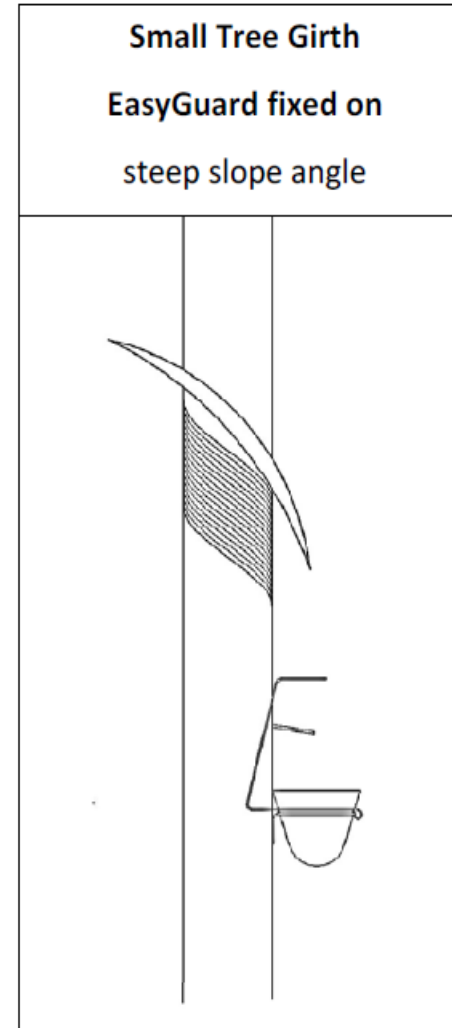
Challenges

Challenges During Raining Season

1. Unable to tapped – Lose tapping days.
2. Washout (Unless Latex Coagulant is applied immediately after tapping for field coagulum or known as rubber cup lump in lay mans term).
3. Workers tapping without knowledge during raining season causing (Brown Bast). Brown bast is second most serious threat to rubber estate after, Pestalotiopsis from a estates perspective of view.
4. Unable to achieve monthly yield and fail to fulfill yearly targets.
5. Rubber tapping will be done vigorously during dry months to compensate for raining days. However, this method has been known to cause critical stress to the rubber trees and resulting in fast decrease in the tree's latex production or ending up with panel dryness and brow bast.
6. When earning of tappers is low during raining season, it will lead to workers running away or becoming free birds. Which will further cost shortage of workers in rubber industry. Which currently is already a major problem for most of the rubber industry in Malaysia

Rain Guard

- EasyGuard was invented and patented by Gaincrest founder in 2003 to overcome the problem.
- EasyGuard is designed to divert rainwater running down the tree tapping panel, which prevents the water from touching the tapping panel and keep the panel dry.
- E.g. Tapping starts at 3.00 AM and there was rain at 9.00 PM a day earlier. The tapper will be able to tapped the tree because the panel is still dry, also take note it wont take effect if is a heavy downpour of rainfall. Estate supervisor must determine whether the panel is dry and safe for tapping. The rain guard has been helpful to achieve higher tapping days for my plantation.
- Cost of material is RM 0.61 / Tree.
- Labour for fixing easy guard is at RM 0.45 / Tree.
- Breakeven of cost – 2 tapping days.



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Rain Guard



Easy Guard with printed numbers and words.



Sealant packed in soft and high barrier plastic bag for easy application and storage.

Modified staple for fixing easy guard onto tree bark.

Contact of Supplier : -

Sean Tham Jiunn-Lung - +6 012-5233 848

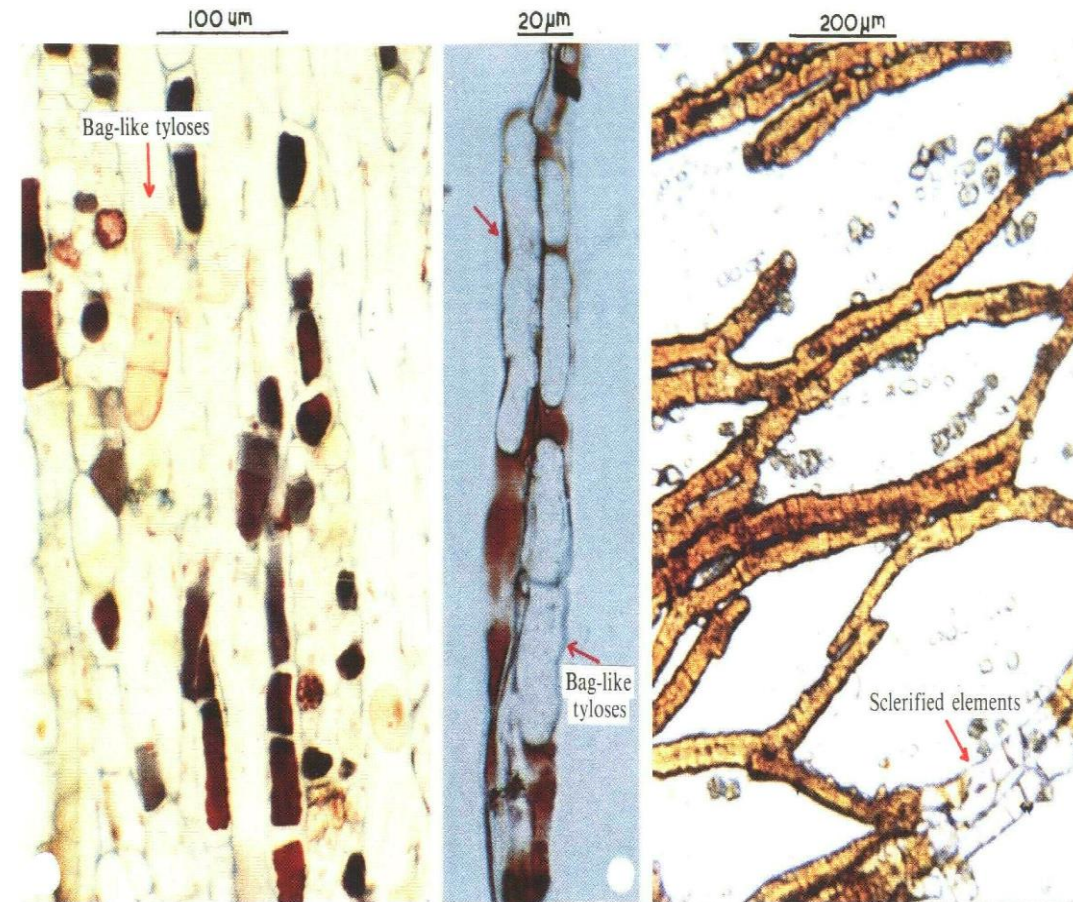
gaincrestindustries@gmail.com



Vertical line drawn between right edge of tapping panel and staple point

Brown Bast

1. Physiological disease or tree characterized by a grayish brown or greenish brown discoloration of the inner bark near the tapping cut and a stoppage in the flow of latex.
2. Tapping Panel Dryness or known as Brown Bast, plantation practices if we are hit by brown bast we will let the tree rest for six months, and try tapping after six months with one round booster of 1.25% of ethereal application (Product : Ethephon Plus 1.25%, supplier- (*Greenyield Berhad – PIC Encik Badrul +6 012 621 5783*)).
3. Brown bast can be a major problem, if we have unskillful tappers and contract tappers who prioritize the money taken back rather than taking care of the rubber tree.
4. Stressing the tree for higher output is what we should avoid taking into consideration the lifespan of the rubber tree which should be able to be tapped for 20 years. If the tree is exploited it may only survive for 10 years. So it's not worth exploiting the rubber tree.



Macerated latex vessels showing sclerified vessels. Note nuclei in them. Safranin and vessels showing bag-like elements. Stained in Sudan HI. Magnification fast green technique. Magnification 256 x .

Source : 2004 - Julio Manuel Barba Gomez, Samsidar Hamzah, H. Ghandimathi

Brown Bast

Pictures showing rubber tree which has brown bast.

Source :

Peninsular Forest
Management Sdn Bhd

Picture taken on 09.06.2020



Brown Bast

Video showing rubber tree which has brown bast.

Source :

Peninsular Forest
Management Sdn Bhd

Video taken on 09.06.2020

Video



Pestalotiopsis

Affected Area and Treatment - 2019

Peninsular Forest Management Sdn Bhd								
Pestalotiopsis Affected Area and Treatment								
1 Incident Detected on (20.07.2019 to 10.10.2019)								
					Treatment Done To date			
Phase	Actual (HA)	Affected (HA)	Affected (%)	1st Round (HA)	2nd Round (HA)	3rd Round (HA)	4rd Round (Ha)	
1	302	118	39%	118	118	118	118	118
2	160	33	20%	33	33	33	33	32
4	109	82	75%	82	82	82	82	18
5	86	34	40%	34	34	34	34	16
Total	657	267	41%	267	267	267	267	184
		Treatment Done %		100%	100%	100%	69%	
A. Yield was affected by 25% due to Pestalotiopsis								

Pestalotiopsis

Affected Area and Treatment - 2020

2 Incident Detected on (05.05.2020 to 14.06.2020)					Treatment Done To date			
Phase	Actual (HA)	Affected (HA)	Affected (%)	1st Round (HA)	2nd Round (HA)	3rd Round (HA)	4rd Round (Ha)	
5	56	35	62%	25	25	25	25	
6	31	23	75%					
Total	87	58	67%	25	25	25	25	
			Treatment Done %	43%	43%	43%	43%	
<p>A. Yield is estimated to fall by 40% due to Pestalotiopsis, there is about 30% leaf left which can be seen on the branches.</p>								

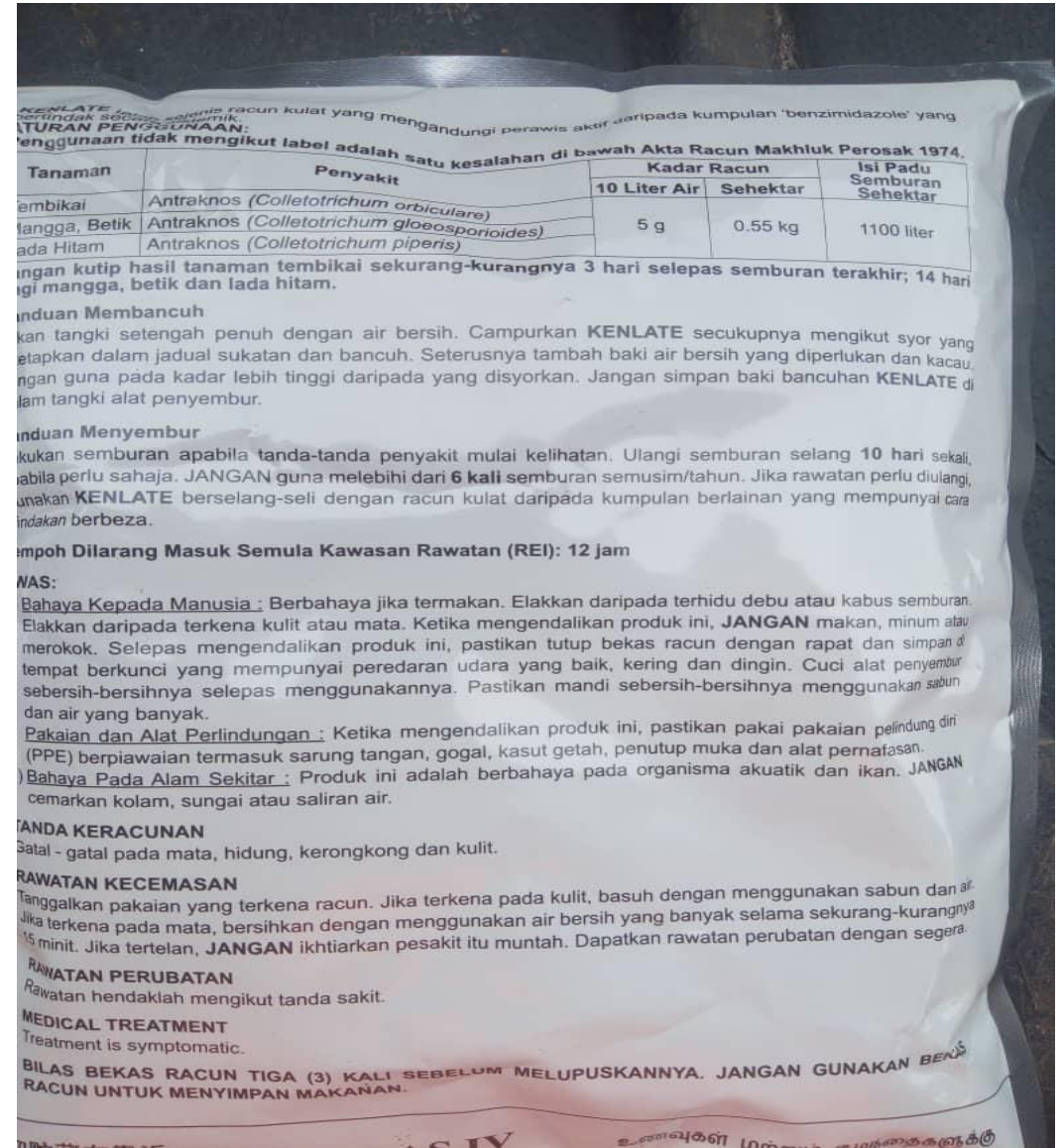
Pestalotiopsis

Table below shows, how the plantation keep tracks of the treatment done – May 2020

Peninsular Forest Management Sdn Bhd									
Pestalotiopsis Affected Area and Treatment									
1. Incident Detected on 05.05.2020									
						Treatment	Treatment	Treatment	Treatment
						06.05.2020	13.05.2020	20.05.2020	27.05.2020
Phase	Block	Clone	Actual Ha	Affected Ha	Affected %	1st Round	2nd Round	3rd Round	4th Round
5	2/11	RRIM 2025	7.89	5.52	70%	06.05.2020	13.05.2020	20.05.2020	27.05.2020
5	2/12	RRIM 2025	1.86	1.49	80%	06.05.2020	14.05.2020	21.05.2020	30.05.2020
5	2/13	RRIM 2025	1.81	1.27	70%	07.05.2020	14.05.2020	21.05.2020	30.50.2020
5	2/14	RRIM 2025	4.68	2.34	50%	07.05.2020	14.05.2020	21.05.2020	30.05.2020
5	2/16	RRIM 2025	5.13	2.57	50%	12.05.2020	19.05.2020	22.05.2020	06.06.2020
5	1/4	RRIM 2025	4.12	2.06	50%	09.05.2020	15.05.2020	23.05.2020	04.06.2020
5	1/5	RRIM 2025	1.93	1.35	70%	09.05.2020	15.05.2020	23.05.2020	04.06.2020
5	1/6	RRIM 2025	3.94	2.76	70%	11.05.2020	16.05.2020	25.05.2020	05.06.2020
5	1/8	RRIM 2025	5.83	4.08	70%	11.05.2020	16.05.2020	25.05.2020	05.06.2020
5	3/2	RRIM 3001	5.75	1.73	30%	12.05.2020	19.05.2020	22.05.2020	06.06.2020
Total			42.94	25.16					

Pestalotiopsis

Pestalotiopsis Treatment Using (Benomyl)



Pestalotiopsis – Rubber Leaf Fall



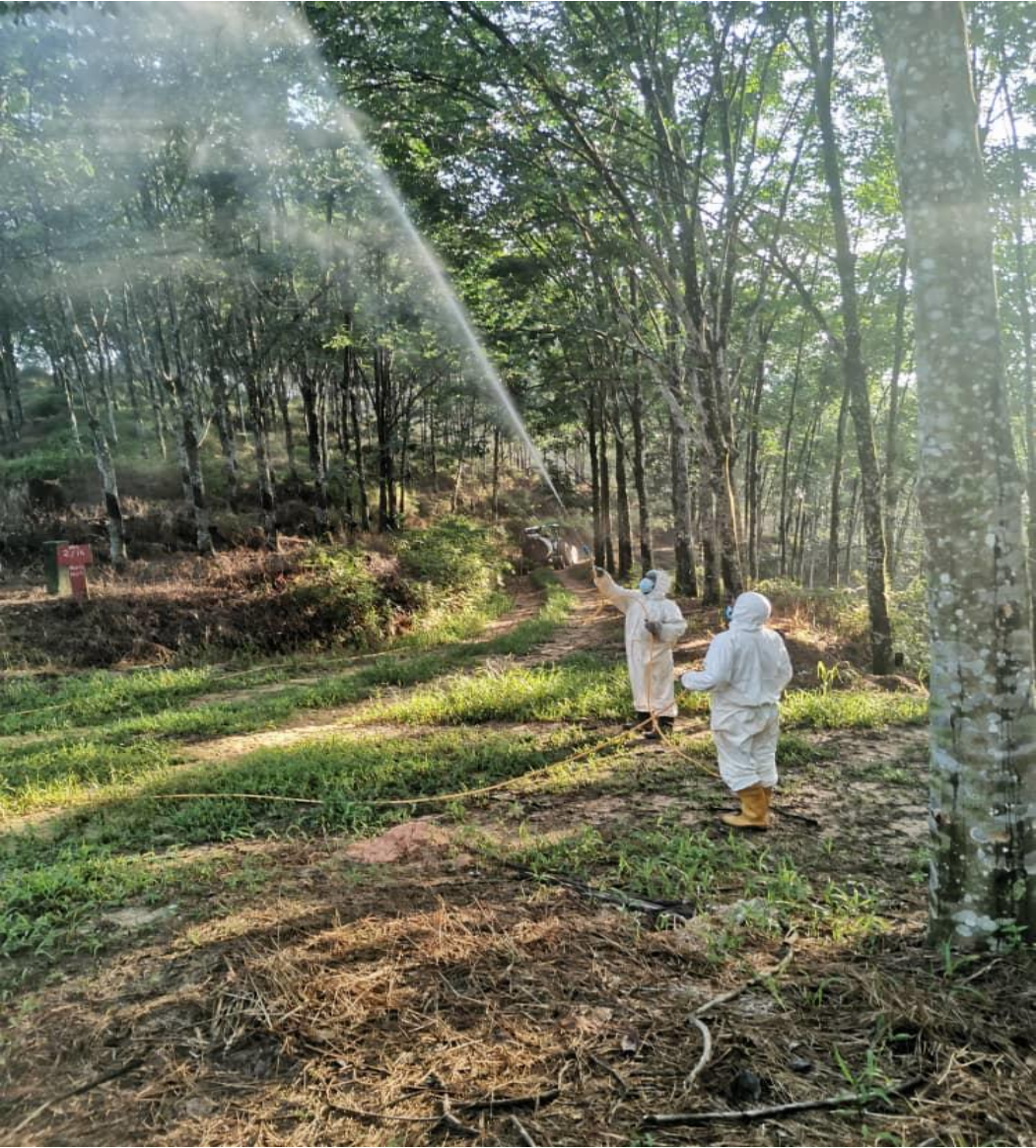
Pestalotiopsis – Sample of rubber tree Leaf



Pestalotiopsis – Video - Major rubber leaf fall



Pestalotiopsis – Treatment in progress using mechanical sprayer



Pestalotiopsis – Video – Treatment in progress

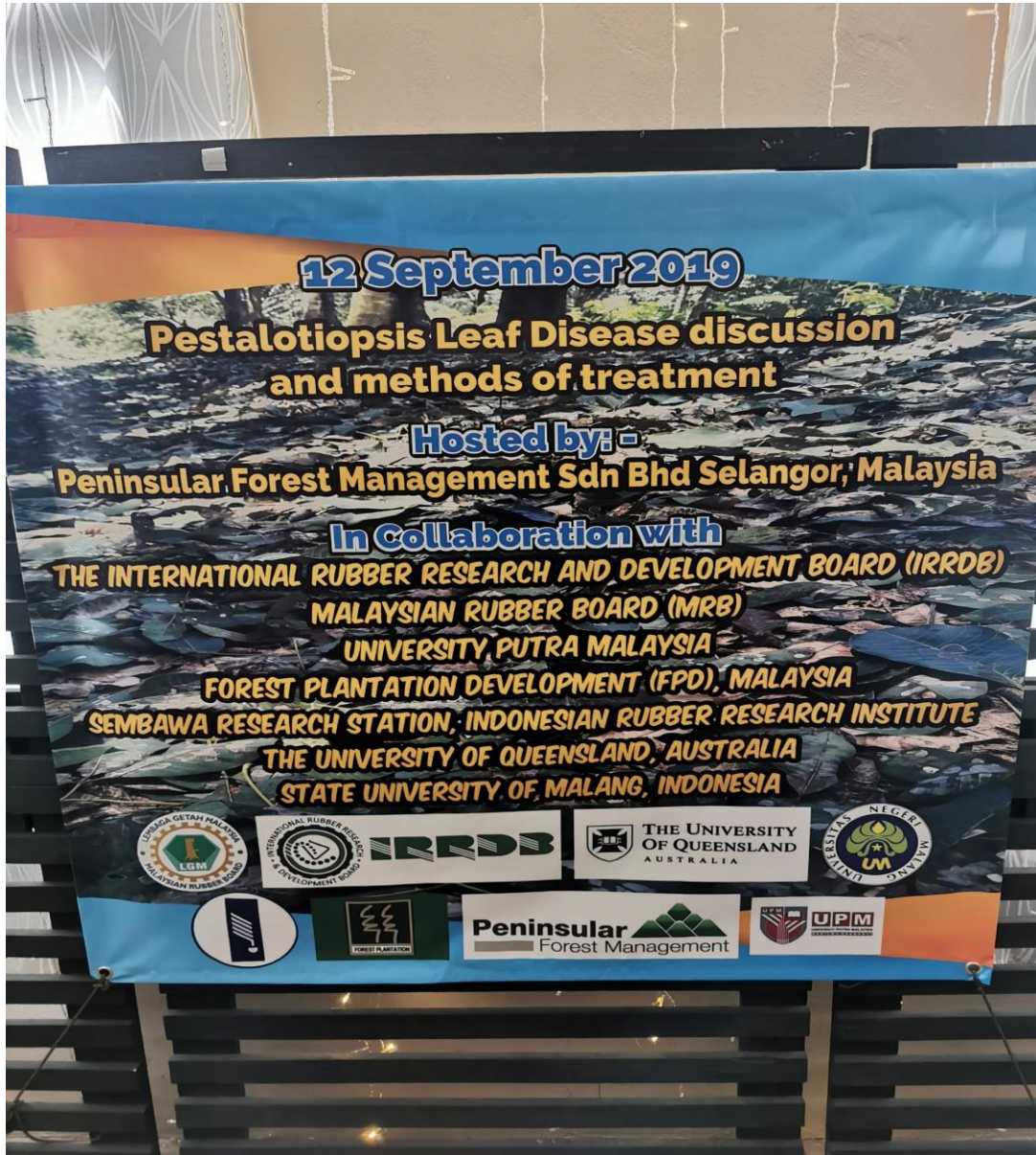


How to Increase Productivity (Workers / Time / Sun / Rain / Recovery)

1. Monitoring of working hours for tappers, to achieve the highest yield tappers are advice to start tapping at 3.00 AM, and to avoid tapping after 9.30 AM, avoid tapping during sun light due to the panel will dry and latex flow will be very slow and not worth the effort, stressing the tree may also lead to panel dryness and lead to brown bast.
2. To do recovery tapping, management can have a policy to carry out recovery tapping on high raining days, recovery tapping can be in the evening or switch from D3 to D2 tapping.
3. E.g. on Monday suppose to tapped Section A, but it started raining 1 AM, that particular section can be tapped in the evening and the next day Section B can be tapped. So that we don't lose the tapping days.
4. Another method of recovery tapping is to switch from D3 to D2, tappers can tapped 1.5 task/day to recover for the loss days. No of trees per task must be considered as well.
5. Normally we say 300 days = 100% tapping
365 days less 52 Sundays = 313 days
11 days less public holiday = 302 days
D3 tapping will get about = 100 tapping / Year
D2 tapping will get about = 150 tapping / Year
However if you achieve (+/-) 95% out-turn of tappers or 280 tapping days it's a good output.
6. The management of the plantation plays a very important role on how the recovery plan is executed.
7. Rain guard plays an important role, as explain on the above slides.



Visit hosted by Peninsular Forest Management Sdn Bhd at their rubber estate – 12.09.2019



Visit to check the quality and process of the collection for field coagulum (Rubber Cup Lump) – 12.09.2019



Thank You
For Your Time



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