



Woodman Plantation Group Semanok Estate

Yield performance after
applying IBG Bio Fertilizer

Period: 2007 - 2010

Location: 16 km from Tatau
town, and 68 km from Bintulu
town, Sarawak, Malaysia.

No. 3 Jalan TPP 1/3, Taman
Perindustrian Kinrara, 47130
Puchong, Selangor Darul
Ehsan.

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f. 03 - 80521303

info@ibgv.com.my
www.ibgv.com.my

Introduction

Semanok estate had more than 2,700 planted hectare, with palms planted since 2003 – 2006. IBG bio fertilizer application had started and which data had been collected since year 2007. This estate has been using IBG bio fertilizer for 4 years (2007 – 2010). Its harvesting interval was 12 – 14 days. Rainfall was 4,000 – 6,000 mm. Semanok is a peat soil estate. IBG bio fertilizer commercial application on Semanok estate had started since year 2007 after the appealing results from Usaha Sepadan estate.

Objective

To evaluate the efficacy of IBG Bio Fertilizer on FFB production of oil palm.

Fertilizer Program

a. Fertilizer programme for the control blocks

- To follow exactly the estate fertilizer programme recommended by Woodman Plantation.

Conventional Manuring Program				
No.	Fertilizer	Dosage	Cost/palm	Cost/ha (150 palms)
1	Urea	0.50 kg	RM 0.90	RM 135.00
	MOP	2.00 kg	RM 3.10	RM 465.00
2	Urea	0.50 kg	RM 0.90	RM 135.00
	MOP	2.00 kg	RM 3.10	RM 465.00
3	RP	1.00 kg	RM 0.72	RM 108.00
4	ZnCu	0.125 kg	RM 0.70	RM 105.00
	Borate	0.15 kg	RM 0.35	RM 51.75
5	Urea	0.50 kg	RM 0.90	RM 135.00
	MOP	2.00 kg	RM 3.10	RM 465.00
	Total	8.78 kg	RM 13.77	RM 2,064.75

b. Fertilizer programme for treatment blocks

- IBG fertilizer programme was made by IBG Manufacturing Sdn. Bhd. based on the existing Woodman's fertilizer program.

IBG Bio Fertilizer Manuring Program				
No.	Fertilizer	Dosage	Cost/palm	Cost/ha (150 palms)
1	Packed MOP Subsoil	5.00 kg	RM 7.75	RM 1,162.50
2	IBG bio fertilizer (4 L)	20 ml	RM 1.73	RM 258.75
3	ZnCu	0.125 kg	RM 0.70	RM 105.00
	Borate	0.15 kg	RM 0.35	RM 51.75
4	IBG bio fertilizer (4 L)	20 ml	RM 1.73	RM 258.75
	Total	5.28 kg + 40 ml	RM 12.25	RM 1,836.75
	Total cost saving/palm		RM 1.52	

Semanok conventional program had used 5 round of 8.78 kg of chemical fertilizer. The cost/palm was RM 13.77, and cost/ha was RM 2,064.75. By using IBG bio fertilizer program, application round had reduced to 4 round of 5.28 kg of chemical fertilizer + 40 ml of IBG bio fertilizer. The cost/palm was RM 12.25, and cost/ha was RM 1,836.75.

Method of application

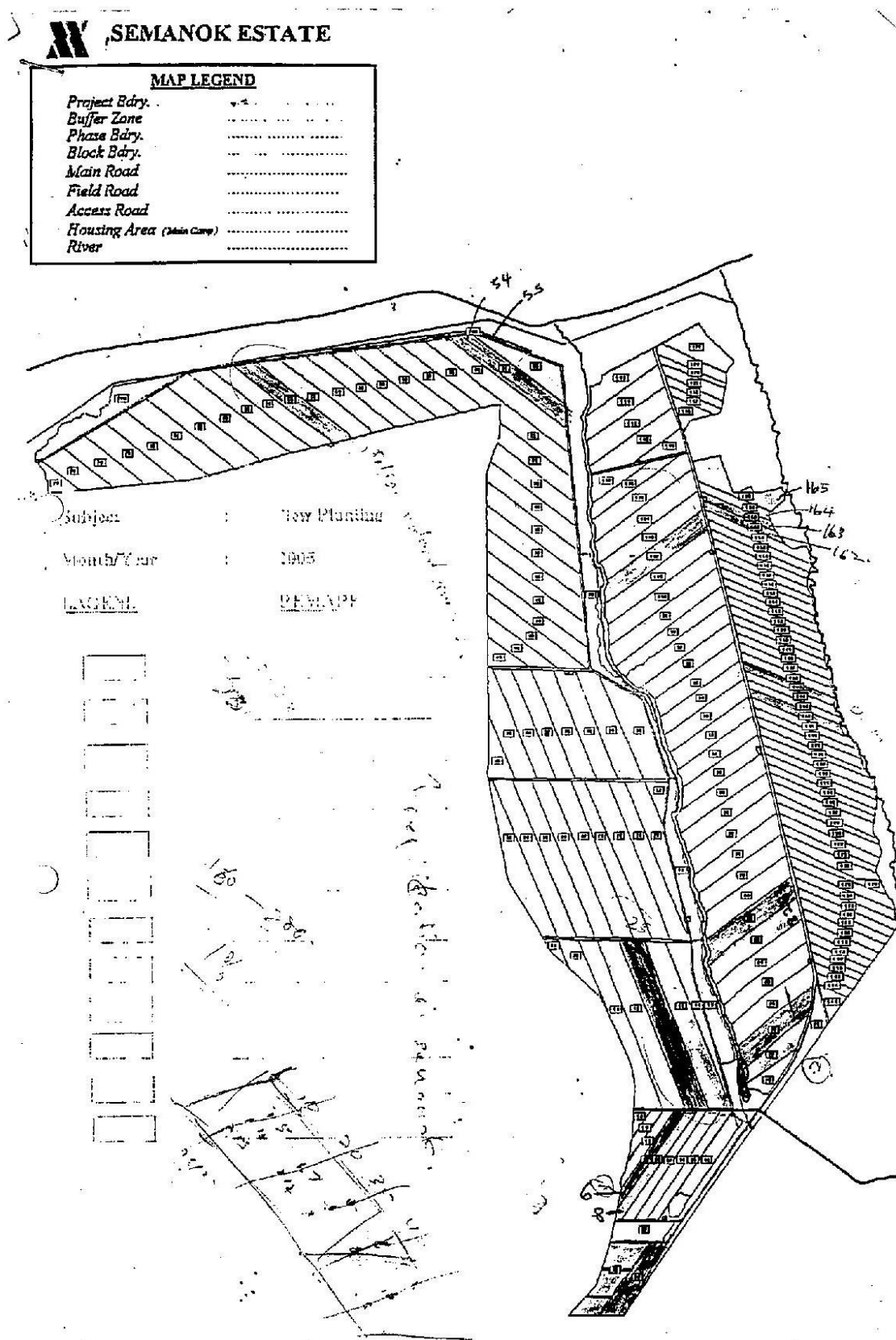
The straight/compound fertilizers are to be applied to the palm circles using ordinary practices by estate while IBG Bio Fertilizer is to be applied to the palm base using Conventional Knapsack Sprayer (CKS).

Yield record

The yield record will be updated in terms of each trial block's total metric ton every year to observe the performance of IBG Bio Fertilizer on the yield increment.

Duration: 2007 – 2010 (4 years)

IBG bio fertilizer commercial application on Semanok estate had started since year 2007 after the appealing results from Usaha Sepadan estate.



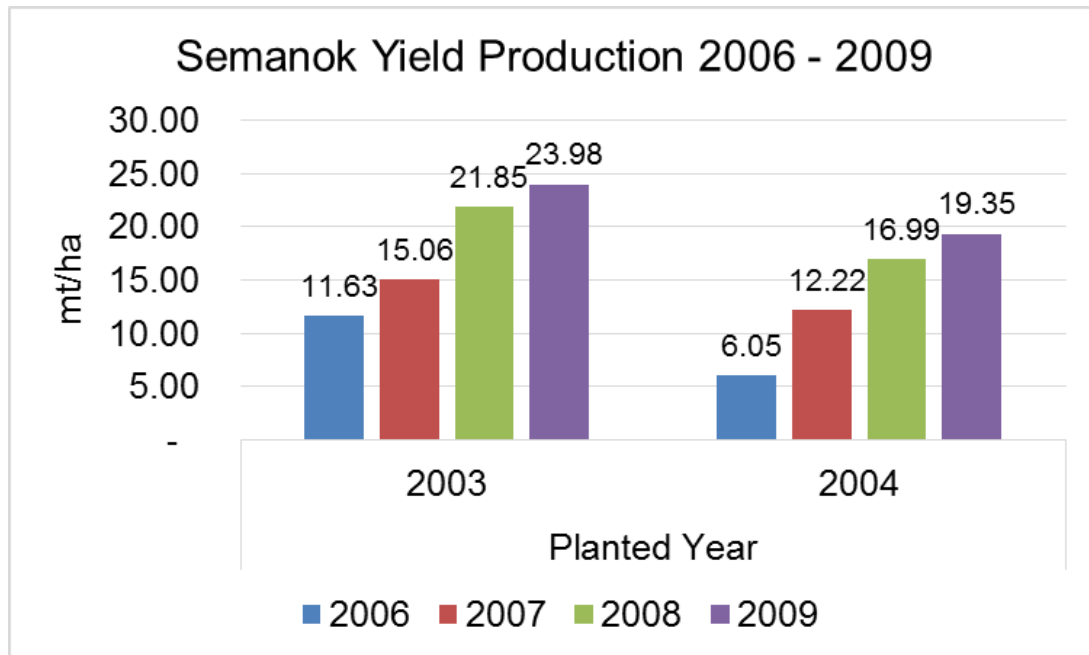
Yield Comparison on Fertilizers Trials (January – December 2007) on Semanok Estate

At year 2007, a trial between IBG bio fertilizer and other liquid base new technology product (enzymes base, biological base) was conducted on Semanok estate. 4 different products were used to make the comparison and the data was collected. The palm at that area was planted on year 2003.

Block	Details	Quarters				Total	Remarks
		1 st	2 nd	3 rd	4 th		
6 (15.23 ha)	Bunches	27,135	16,491	14,802	22,260	80,688	Trial A
	ABW	4.07	3.40	4.45	4.20	4.02	
	Total mt	110.44	56.07	65.87	93.49	324.37	
	Yield/ha	7.25	3.68	4.32	6.14	21.30	
7 (12.33 ha)	Bunches	21,696	13,407	12,819	19,696	66,618	Trial B
	ABW	3.90	3.40	4.45	4.20	4.02	
	Total mt	84.61	45.58	57.04	82.72	267.80	
	Yield/ha	6.86	3.70	4.63	6.71	21.71	
8 (12.66 ha)	Bunches	18,810	10,068	18,687	20,452	68,017	IBG - Trial C
	ABW	4.36	3.50	4.62	4.55	4.36	
	Total mt	82.01	35.24	86.33	93.05	296.63	
	Yield/ha	6.48	2.78	6.81	7.35	23.40	
9 (9.54 ha)	Bunches	12,450	6,969	12,948	14,516	46,883	Trial D
	ABW	4.27	3.61	4.76	4.50	4.02	
	Total mt	53.16	19.30	61.63	65.32	188.47	
	Yield/ha	5.57	2.02	6.46	6.85	19.76	

The trial shows that the highest yield/ha was achieved by IBG, reaching **23.40 mt/ha**; 2.10 mt/ha (9.86%) more than Trial A, 1.69 mt/ha (7.78%) more than Trial B, and 3.64 mt/ha (18.42%) more than Trial D. Due to confidentiality reasons, the name of other products will not be disclosed. It shows that IBG bio fertilizer has the competitive advantages over other current products at the market in terms of increasing the yield.

IBG Bio Fertilizer Application on Semanok



Yield comparison

There are 2 types of oil palm planted year in this estate, 2003 & 2004. There is no control or treatment plot in this estate because IBG bio fertilizer had been fully used. From 2006 – 2009, the yield in 2003 YOP, has been increasing from 11.63 mt/ha to 23.98 mt/ha, the increment was **12.35 mt/ha in 3 years**, average increment was **4.12 mt/ha/year**.

The yield in 2004 YOP shows increment also from 6.05 mt/ha to 19.35 mt/ha in 2006 – 2009, the increment was **13.30 mt/ha in 3 years**, average increment was **4.43 mt/ha/year**. This estate still applying IBG bio fertilizer on year 2010 but IBG does not record the yield anymore.

Visual improvement on Semanok's palm



Picture 1, 2, 3 & 4: The bunches was well-formed on the palm.



Picture 5 (Left): Packed MOP for slow release; Picture 6 (Right): Worker spraying the IBG bio fertilizer.

Conclusion

Block	Fertilizer (kg)	Round/year	Cost/palm (RM)	Labour cost/ha* (RM)	Cost/ha (150 palms) (RM)	Total cost/ha (RM)
Control	8.78	5	13.77	40.00	2,064.75	2,104.75
Treatment	5.28 + IBG 40 ml	4	12.25	32.00	1,836.75	1,868.75

Extra yield mt/ha	2.19*
Average price/mt	RM 460.00
Revenue	RM 1,007.40
Cost variance/ha	RM 236.00
Extra earning/ha	RM 1,243.40

* Labour cost/ha (RM 8 per round) and extra yield mt/ha are based on Usaha Sepadan assumption.

In conclusion, by using IBG bio fertilizer, average yield increment was 2.19 mt/ha*. With the price of CPO RM 2,350, the average price/mt was RM 460. Revenue was $RM\ 460 \times 2.19 = RM\ 1,007.40/ha$. With the fertilizer cost variance RM 236.00/ha, extra earning was $RM\ 1,007.40 + RM\ 236.00 = RM\ 1,243.40/ha$. The extra yield of 2.19 mt/ha, together with the fertilizer cost saving, had become a revenue to the estate, contributed RM 1,243.40/ha.

IBG bio fertilizer was used in this estate from year 2007 – 2010. The yield in 2011 had already exceeded **30 mt/ha**. The effect of IBG bio fertilizer has reflected on the yield increment after being applied for several years.



WOODMAN KUALA BARAM ESTATE SDN. BHD.

(616631-U)

Lot 306, Jalan Krokop, P. O. Box 1437, 98008 Miri, Sarawak.
Tel: 085-419321 (8 Lines) Fax: 085-435470 / 416759 / 420145

DATE : 25th May 2010

To Whom It May Concern:

This serve to certify that the IBG Microorganism Bio Fertilizers is a high technology product which Woodman Group Of Companies are using such as Usaha Sepadan Estate on mineral soil. Tamar Estate, Tatau Estate and Semanok Estate are on peat area for several years, area coverage approximately **18,000 Ha** since 2003 till at present.

After using this IBG-BIO Fertilizers product, it is proven that this product really benefits us through cost saving at 20% generally, maintain and improve its productivity, reducing labour cost, improve the soil structure and maintain adequate soil moisture without extra cost where the quantity of micro-organism in the soil create healthy natural environment for the palm growth where we reduce our chemical cost at 30% generally.

We do not hesitate to recommend any clients or company to use this product where it is mutual benefit for long term purposes.

Thank you,

Yours truly,
WOODMAN KUALA BARAM ESTATE SDN. BHD.

MR. ANTHONY JAU
Senior Plantation Manager



Appendix – Purchase Order

17/07 2008 16:33 FAX

082 251836

001/003

WOODMAN PLANTATION SDN. BHD. (571984-D)

P. O. Box 3370, 97013 Bintulu, Sarawak.
Tel: 086-326327 Fax: 086-391236, 391510

Semanok Estate

PURCHASE ORDER

No. 019866

M/o Bio-Agro Products Sdn. Bhd.

Attn: Adnan Cheong ATTN: SYAH

DATE: 16-07-2008

PRODUCT: ELO-03635

Item	Quantity	Part No.	Description	Unit Price	Remark
1	3724 Jar	Bio-Agro Oil Palm (4LT)		345.00	1284780.00
2	3724 Jar	Bio-Agro Potassium (4LT)		173.00	644252.00
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Purchase Order 16th July 2008

RM 345/bottle x 3,724 bottles
IBG OP** = RM 1,284,780

RM 173/bottle x 3,724 bottles
IBG Potassium** = RM 644,252

Total = RM 1,929,032

** IBG OP & IBG Potassium are products of IBG Manufacturing Sdn. Bhd.

The above work to be completed within days/weeks upon receipt of this order
goods to be delivered

Item Only

Authorized Signature

WOODMAN PLANTATION SDN. BHD.

(Company No. 571984-D)

Lot 306, Jalan Kropkop, P.O.Box 1437, 98008 Miri, Sarawak.
Tel: 085-419321 (6 Lines) Fax: 085-420145, 433039

Purchase Order

M/S BIO-AGRO PRODUCTS SDN. BHD.

P.O No. : WPT-09/36278

Date : 17/10/2009

P.R No. : 04922

R/N No. :

Page : 1 of 1

Item	Quantity	Part No.	Description	Unit Price	Remark
1	2,500.00 JAR	BIOMO001	BIO MOLECULE (4LT)	200.00	

Purchase Order 17th October 2009

RM 200/bottle x 2,500 bottles
Bio Molecule** = RM 500,000

Total = RM 500,000

** Bio Molecule is a product of
IBG Manufacturing Sdn. Bhd.

The above work to be completed within _____ days / weeks upon receipt of this order.
goods to be delivered

RM 500,000.00

SEMANOK ESTATE


Authorised Signature

WOODMAN PLANTATION SDN. BHD.

(Company No. 571984-D)

Lot 396, Jala: Kropkop, P.O.Box 1437, 98008 Miri, Sarawak.
Tel: 085-419331 (6 Lines) Fax: 085-420145, 433039

Purchase Order

M/S BIO-AGRO PRODUCTS SDN. BHD.

P.O No. : WPT-09/36348

Date : 16/12/2009

P.R No. : 05040

R/N No. :

Page : 1 of 1

Item	Quantity	Part No.	Description	Unit Price	Remark
1	1,679.00 JAR	BIOM0001	BIO MOLECULE (4LT)	200.00	

Purchase Order 16th December 2009

RM 200/bottle x 1,679 bottles
Bio Molecule** = RM 335,800

Total = RM 335,800

** Bio Molecule is a product of
IBG Manufacturing Sdn. Bhd.

FOB

The above work to be completed within _____ days / weeks upon receipt of this order.
goods to be delivered

RM 335,800.00

SEMANOK ESTATE



Authorised Signature