



Woodman Plantation Group Tamar 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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Introduction

Tamar estate had more than 4,000 planted hectare (consists of 1,300 Alan Batu), with palms planted since 2001 – 2002. Alan batu is an area where the big stump was located beneath the soil. The growth of the oil palm will be slow if planted on this area. 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 3,000 – 5,000 mm. Tamar is a peat soil estate. IBG bio fertilizer commercial application on Tamar 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	

Tamar 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

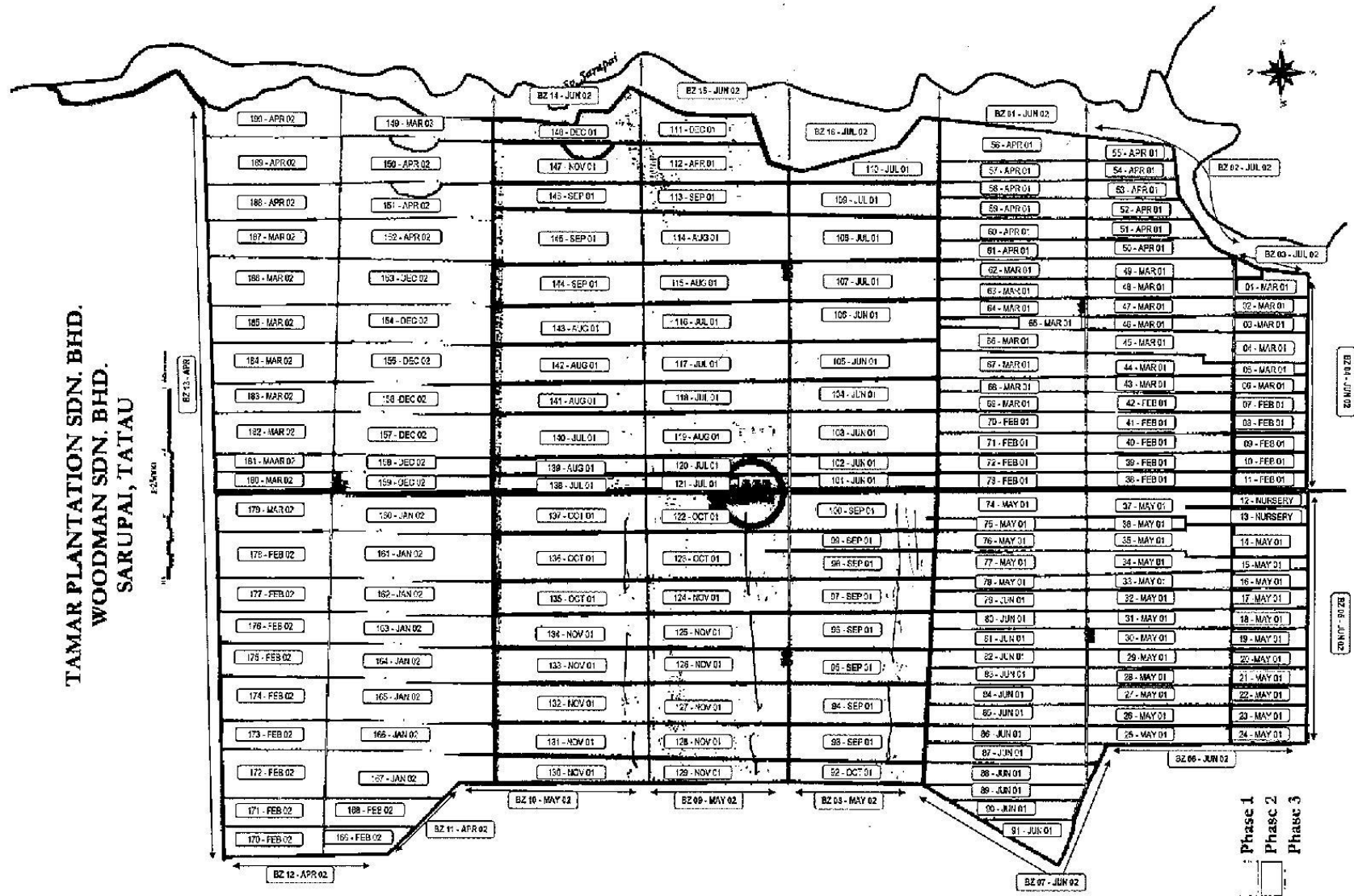
The straight/compound fertilizers are to be applied to the palm circles using ordinary practices by estate while IBG Bio Fertilizer is to be applied to the palm base using Conventional Knapsack Sprayer (CKS).

Yield record

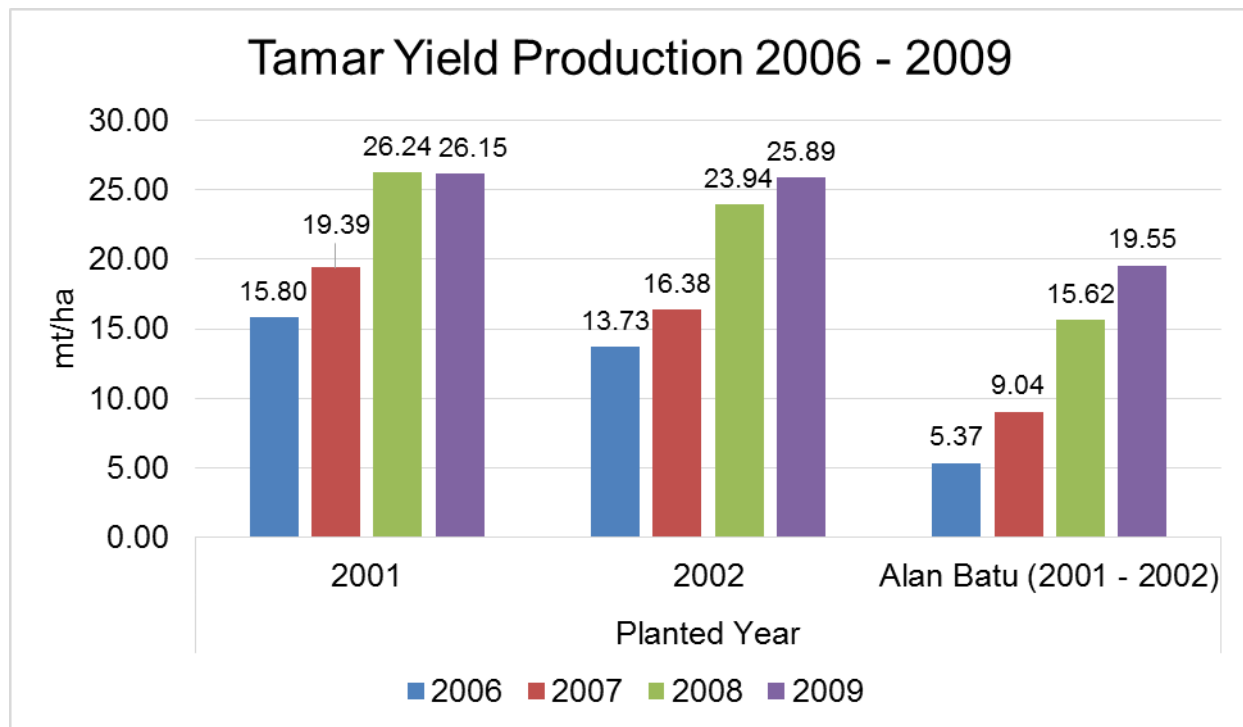
The yield record will be updated in terms of each trial block's total metric ton every year to observe the performance of IBG Bio Fertilizer on the yield increment.

Duration: 2007 – 2010 (4 years)

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



IBG Bio Fertilizer Application on Tamar



Yield comparison

There are 2 types of oil palm planted year in this estate, 2001 & 2002, with 1,300 ha of Alan Batu (DOP 2001 – 2002). There is no control or treatment plot in this estate because IBG bio fertilizer had been fully used. From 2006 – 2009, the yield in 2001 YOP, has been increasing from 15.80 mt/ha to 26.15 mt/ha, the increment was **10.35 mt/ha in 3 years**, average increment was **3.45 mt/ha/year**.

The yield in 2002 YOP shows increment also from 13.73 mt/ha to 25.89 mt/ha in 2006 – 2009, the increment was **12.16 mt/ha in 3 years**, average increment was **4.05 mt/ha/year**. Surprisingly, alan batu area's yield increase from 5.37 mt/ha to 19.55 mt/ha in 2006 – 2009, the increment was **14.18 mt/ha in 3 years**, average increment was **4.73 mt/ha/year**. This estate still applying IBG bio fertilizer on year 2010 but IBG does not record the yield anymore.

Visual improvement on Tamar's palm



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

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 was **27 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

TAMAR PLANTATION SDN. BHD.

(Company No. 455008-P)

Lot 306, Jalan Kropok, 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. : TMP-09/40294

Date : 16/12/2009

P.R No. : 07014

R/N No. :

Page : 1 of 1

Item	Quantity	Part No.	Description	Unit Price	Remark
1	2,625.00 JAR	BIO001	BIO-AGRO OIL PALM (4LT)	345.00	February 20

Purchase Order 16th December
2009

RM 345/bottle x 2,625 bottles
IBG OP** = RM 905,625

Total = RM 905,625

** IBG OP (IBG Oil Palm Bio
Fertilizer) is products 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 905,625.00

TAMAR ESTATE

Authorized Signature

TAMAR PLANTATION SDN. BHD.

(Company No. 455008-P)

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. : TMP-09/40263

Date : 07/10/2009

P.R No. : 06898

R/N No. :

Page : 1 of 1

Item	Quantity	Part No.	Description	Unit Price	Remark
1	2,332.00 JAR	BIOMO001	BIO MOLECULE (4LT)	200.00	

Purchase Order 7th October 2009

RM 200/bottle x 2,332 bottles
Bio Molecule** = RM 466,400

Total = RM 466,400

** 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 466,400.00

TAMAR ESTATE

[Signature]
Authorized Signature

TAMAR PLANTATION SDN. BHD.

(Company No. 455008-P)

Lot 386, Jalan Kropok, P.O.Box 1437, 98008 Miri, Sarawak.
Tel: 081-419321 (6 Lines) Fax: 085-420145, 433039

Purchase Order

M/S BIO-AGRO PRODUCTS SDN. BHD.

P.O No. : TMP-09/40293

Date : 16/12/2009

P.R No. : 07014

R/N No. :

Page : 1 of 1

Item	Quantity	Part No.	Description	Unit Price	Remark
1	2,625.00 JAR	BIOM0001	BIO MOLECULE (4LT)	200.00	January 20:

Purchase Order 16th December
2009

RM 200/bottle x 2,625 bottles
Bio Molecule** = RM 525,000

Total = RM 525,000

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

FOB

58.52

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

RM 525,000.00

TAMAR ESTATE

Authorized Signature