



Mafrika Group Meruan Estate

Yield performance after
applying IBG Bio Fertilizer

Period: 2009 – Current

Location: Km5, Jalan Dijih,
Selangau, Off Km 72, Sibu -
Bintulu Road

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

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Introduction

IBG bio fertilizer application in Mafrica group started at Meruan estate at year 2009. IBG bio fertilizer application had started and which data had been collected since year 2009. This estate has been using IBG bio fertilizer from 2009 – current year and still using. Meruan had over 4820.07 hectare, with palms planted on 2000, 2006 – 2012, while the whole Mafrica group of plantation has more than 40,000 ha planted of estate fully using IBG bio fertilizer. Meruan harvesting interval was 15 days. Rainfall ranging from 3,000 – 5,000 mm. Meruan is a mineral soil estate. IBG bio fertilizer application on Meruan estate had started since year 2009 after the appealing results from Jobenar Raya 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 Meruan.

Conventional Manuring Program				
No.	Fertilizer	Dosage	Cost/palm	Cost/ha (136 palms)
1	Hi Kay	2.00 kg	RM 3.60	RM 489.60
2	Hi Kay	2.00 kg	RM 3.60	RM 489.60
3	RP	1.50 kg	RM 1.08	RM 146.88
	Kieserite	1.00 kg	RM 0.82	RM 111.52
4	Borate	0.10 kg	RM 0.23	RM 31.28
5	MOP	2.50 kg	RM 3.88	RM 527.00
	Total	9.10 kg	RM 13.21	RM 1,795.88

b. Fertilizer programme for treatment blocks

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

IBG Bio Fertilizer Manuring Program				
No.	Fertilizer	Dosage	Cost/palm	Cost/ha (136 palms)
1	Hi Kay	2.00 kg	RM 3.60	RM 489.60
2	IBG OP**	50 ml	RM 4.31	RM 586.50
3	RP	1.20 kg	RM 0.86	RM 117.50
	Kieserite	0.80 kg	RM 0.66	RM 89.22
4	Borate	0.10 kg	RM 0.23	RM 31.28
5	MOP	2.00 kg	RM 3.10	RM 421.60
	Total	6.10 kg + 50 ml	RM 12.76	RM 1,735.70
	Total cost saving/palm		RM 0.44	

** IBG OP (IBG Oil Palm Bio Fertilizer) is product of IBG Manufacturing Sdn. Bhd.

Meruan conventional program had used 5 round of 9.10 kg of chemical fertilizer. The cost/palm was RM 13.21, and cost/ha was RM 1,795.88. By using IBG bio fertilizer program, application round was 5 round of 6.10 kg of chemical fertilizer + 50 ml of IBG bio fertilizer. The cost/palm was RM 12.76, and cost/ha was RM 1,735.70.

Method of application

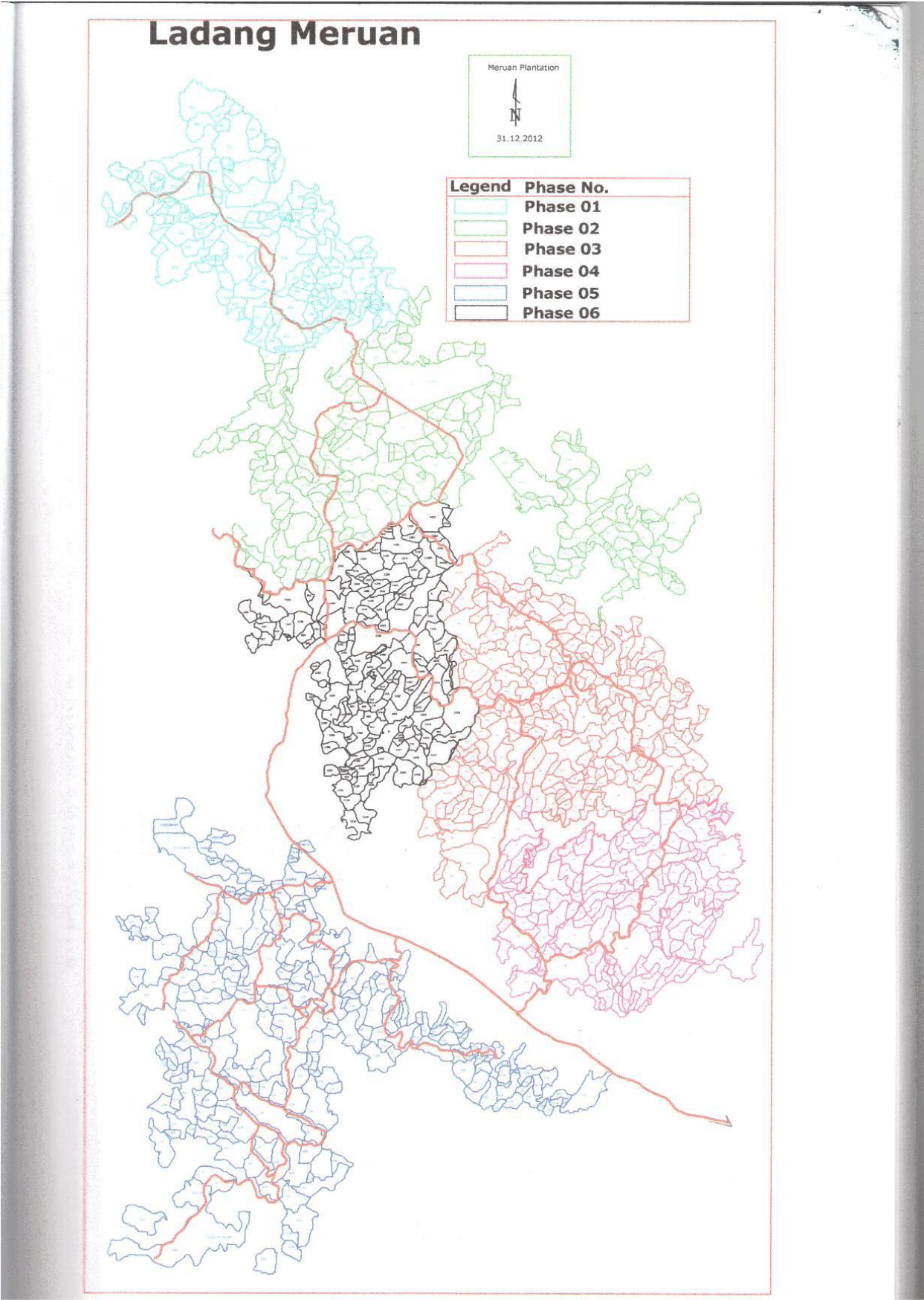
The straight/compound fertilizers are to be applied to the palm circles using ordinary practices by estate while IBG Bio Fertilizer is to be applied to the palm base using Conventional Knapsack Sprayer (CKS).

Yield record

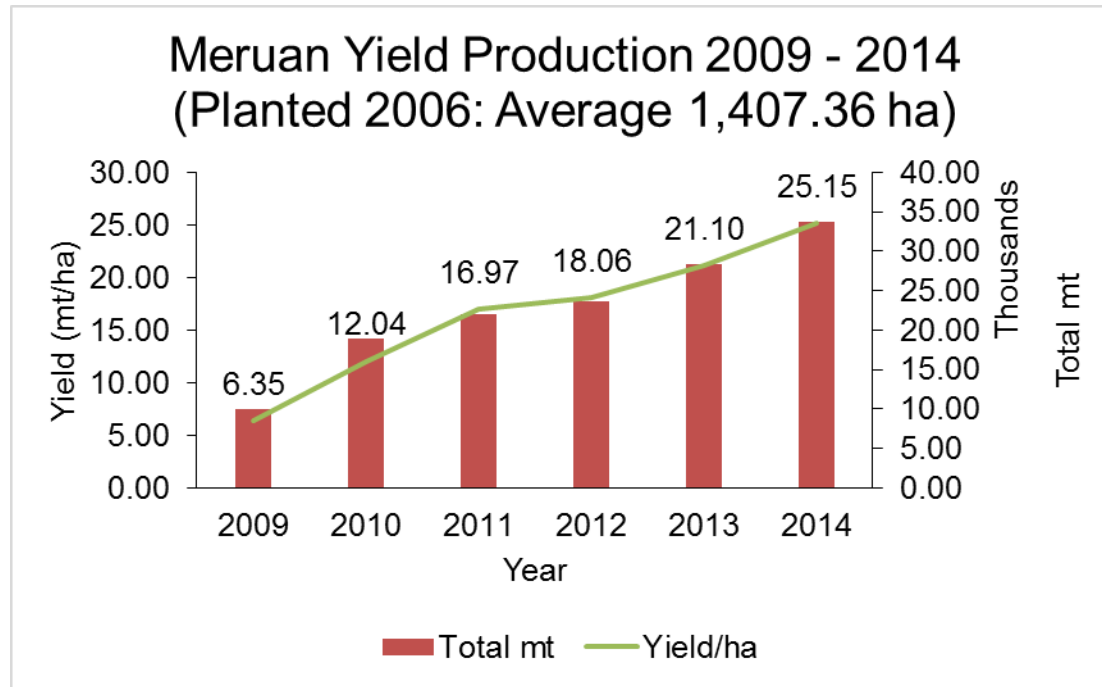
The yield record will be updated in terms of each trial block's total metric ton every year to observe the performance of IBG Bio Fertilizer on the yield increment.

Duration: 2009 – Current

IBG bio fertilizer trial application on Meruan estate had started since year 2009. At year 2009, IBG bio fertilizer had been fully used on the estate after the promising result of Jobenar Raya.



Meruan Yield Production 2009 - 2014



Year	Harvesting ha	Total mt	Yield/ha
2009	1,576.88	10,010.21	6.35
2010	1,576.88	18,978.29	12.04
2011	1,293.30	21,944.04	16.97
2012	1,312.37	23,704.16	18.06
2013	1,342.37	28,323.23	21.10
2014	1,342.37	33,763.96	25.15

There are several types of oil palm planted year in this estate, ranging from 2006 – 2012 YOP. 2006 YOP were chose to report here. There is no control or treatment plot in this estate because IBG bio fertilizer had been fully used. From 2009 – 2014, the yield of 2006 YOP, has been increasing from 6.35 mt/ha to 25.15 mt/ha, the increment was **18.8 mt/ha in 5 years, average increment was 3.76 mt/ha/year**.

Visual improvement on Meruan's palm

2008

Magnesium deficiency was found on the palm.



Bunches were recovering from nutrient deficiency

2012

The palm was growing healthy and bunches were fully ripped.



Observed palm has low female inflorescence.

2009

The immature palm bunch was growing full and healthy.



The palm was growing healthy and bunches were fully ripped.



Conclusion

Block	Fertilizer (kg)	Round/year	Cost/palm (RM)	Labour cost/ha** (RM)	Cost/ha (136 palms) (RM)	Total cost/ha (RM)
Control	9.10	5	13.21	40.00	1,795.88	1,835.88
Treatment	6.10 + IBG 50 ml	5	12.76	40.00	1,735.70	1,775.70

Extra yield mt/ha	2.19*
Average price/mt	RM 460.00
Revenue	RM 1,007.40
Cost variance/ha	RM 60.18
Extra earning/ha	RM 1,067.58

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

IBG bio fertilizer apply on Meruan estate on January and July every year with the dosage of 50 ml/palm.

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 60.18/ha, extra earning was $RM\ 1,007.40 + RM\ 60.18 = RM\ 1,067.58/ha$. The extra yield of 2.19 mt/ha, together with the fertilizer cost saving, had become a revenue to the estate, contributed **RM 1,067.58/ha**.

In year 2014, Meruan had achieved total yield of 70,367.65 mt for the whole estate (total area 4,820.07), this estate had attained **25.82 mt/ha**, which is one of the highest yield estates in Sarawak. This is the result from good management, great teamwork and wise fertilizer usage in plantation.

Appendix – Testimony

PALM GROUP HOLDINGS SDN.BHD. (462042 - M)

(Member of Mafrica Group of Companies)

25.1-25.2, Level 25, Wisma Sanyan,
No.1, Jalan Sanyan, 96000 Sibu, Sarawak, Malaysia
Telephone: + 6084-332155 / 0198277155, Fax: + 6084-332153

28th Aug 2010

TO WHOM IT MAY CONCERN

Ladang Jobenar Raya Sdn.Bhd commenced using IBG Oil Palm Bio Fertilizer combined with Chemical Fertilizer for oil palm growth and sustainable yield improvement in 2006 until now.

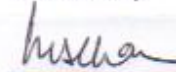
Over the past 4 1/2 years of usage of IBG Bio- Fertilizer, the average yield increase was 18.25% as compared over the control blocks.

For sustainable palm oil production, integrated use of chemical and bio-fertilizer has shown to have a significant improvement in sustaining soil health through earthworm cast formation on the soil surface for oil palm production, reduction dosage of NPK by positive improvement in terms of foliar nutrients level, cost saving and good yield improvement by about 20% over the complete usage of conventional fertilizers.

Currently, our group of eight peat and mineral soils oil palm estates covering a hectareage of 18,885.10 hectares is using the IBG Bio Fertilizers on a large and commercial scale.

For best results, IBG Bio-Fertilizer should be integrated with mineral fertilizers and the latter can be reduced by 20 - 30%.

Yours faithfully,



CHAN WING SAN
Operations General Manager



Appendix - Mafrica IBG Bio Fertilizer Quantity Purchased

Mafrica IBG Bio Fertilizer Quantity Purchased	
Year	IBG Bio Fertilizer Quantity purchased (bottles)
2006	200
2007	255
2008	5,940
2009	19,246
2010	25,535
2011	30,040
2012	32,737
2013	34,125
2014	36,406
2015	42,509

Other Mafrica estates that have used IBG bio fertilizer
Palmcol Sdn. Bhd.
Rosebay Enterprise Sdn. Bhd. (Rosebay 1 & 2)
Palmraya Pelita Sikat Platation Sdn. Bhd.
Palmraya Pelita Meruan Plantation Sdn. Bhd.
Victoria Square Development Sdn. Bhd.
Saradu Plantation Sdn. Bhd.
Worldsign Harvest Sdn. Bhd.
Titasa Sdn. Bhd.
Palmcol Balingian 2
Spapa Oya
Saradu Balingian

Appendix – Purchase Order

Mafrica Maytrading Sdn Bhd (708806-K)
A Member of Mafrica Group of Companies
2nd Floor, No. 11, Jalan Mission Sibu Sarawak Malaysia 96000
Tel : +60-84-322728 Fax : +60-84-331596

VIA FACSIMILE

PURCHASE ORDER

IBG Manufacturing Sdn Bhd
No.3, Jalan TPP 3, Taman Perindustrian Putra, Puchong, Selangor.
Malaysia 47130
Tel: 03-80704797 Fax: 03-80704161
Attn: Dato' Yeap Siaw Ping

Number : MM/P15010774
Date : 16 January, 2015
Page No : 1 of 1
No of Print : 1

No	Description Part No/Item Code	Qty UOM	Unit Price (MYR)	Amount (MYR)
Reference No : PAL29-01 R14110070				
MM/S15010408				
1.	AGR00211 IBG OIL PALM BIOFERTILIZER - Malaysia Remarks: DELIVERY PERIOD:JUN	3,760 BOT @4LTR/BOT	345.00	1,297,200.00
GRAND TOTAL			MYR*****1,297,200.00	

The grand total of MYR*****1,297,200.00 is the nett amount for our Purchase Order No. MM/P15010774.
Thank you.

PO Number: MM/P15010774th
Purchase Order 15 January 2015
RM 345/bottle x 3,760 bottles
IBG OP** = RM 1,297,200

Total = RM 1,297,200

** IBG OP (IBG Oil Palm Bio Fertilizer) is product of IBG Manufacturing Sdn. Bhd.

Invoice To : Mafrica Maytrading Sdn Bhd
Delivery Period :
Notes : Please state our Purchase Order No. & Ref on your D.O. and Invoice.



Delivery To : Palmraya Pelita Meruan Plantation Site
5Km, Jalan Sungai Dijih, Off 72KM Sibu-Bintulu
Selagau Sarawak, Malaysia
Tel : +6084-897170 Fax : +6084-897172
Attn : Ms. Umi Ak Nyerapung

Prepared By :

Verified By :

Authorized By :

Cheng Khing Ping
Date : 15/01/15

Date :

Date :

IBG01

Mafrica Maytrading Sdn Bhd (708806-K)

A Member of Mafrica Group of Companies

2nd Floor, No. 11, Jalan Mission Sibu Sarawak Malaysia 98000
Tel : +60-84-322728 Fax : +60-84-331598

Top Urgent

VIA FACSIMILE

PURCHASE ORDER

IBG Manufacturing Sdn Bhd
No.3, Jalan TPP 3, Taman Perindustrian Putra, Puchong, Selangor.
Malaysia 47130
Tel : 03-80704797 Fax : 03-80704161
Attn : Dato' Yeat Siaw Ping

Number : MMP14121219
Date : 18 December, 2014
Page No : 1 of 1
No of Print : 1

No	Description Part No/Item Code	Qty UOM	Unit Price (MYR)	Amount (MYR)
Reference No : PAL29-01 R14110023				
MM/S14120600				
1.	AGR00211 IBG OIL PALM BIOFERTILIZER - Malaysia Remarks: DELIVERY PERIOD:JAN 2015	3,644 BOT @4LTR/BOT	345.00	1,257,180.00
GRAND TOTAL			MYR*****1,257,180.00	

The grand total of MYR*****1,257,180.00 is the nett amount for our Purchase Order No. MM/P14121219.
Thank you.

PO Number: MM/P14121219
th
Purchase Order 18 December
2014
RM 345/bottle x 3,644 bottles
IBG OP** = RM 1,257,180

Total = RM 1,257,180

** IBG OP (IBG Oil Palm Bio
Fertilizer) is product of IBG
Manufacturing Sdn. Bhd.

Invoice To : Mafrica Maytrading Sdn Bhd
Delivery Period :
Notes : Please state our Purchase Order No. & Ref on your
D.O. and Invoice.

Delivery To : Palmraya Pelita Meruan Plantation Site
5Km, Jalan Sungai Duri, Off 72KM Sibu-Bintulu
Selagau Sarawak, Malaysia
Tel : +6084-897170 Fax : +6084-897172
Attn : Ms. Umi Ak Nyerapung

Prepared By :

Verified By :

Authorized By :

Cheng Khing Ping
Date : 18/12/14

Date : 18/12/2014

Date : 19/12/14 IBG01

Mafrica Maytrading Sdn Bhd (706806-K)

Logistic's Copy

A Member of Mafrica Group of Companies

25.1-25.2, Level 25, Wisma Sanyan, No.1, Jalan Sanyan, Sibul Sarawak Malaysia 96000
Tel : +60-84-322728, 084-332155 Fax : +60-84-331586

VIA FACSIMILE

PURCHASE ORDER

IBG Manufacturing Sdn Bhd
No.3, Jalan TPK 1/3, Taman Perindustrian Kinrara, Puchong, Selangor Darul Ehsan.
Malaysia 47100
Tel : 03-80704797 Fax : 03-80704161
Attn : Dato' Yeat Siaw Ping

Number : MM/P13120409
Date : 5 December, 2013
Page No : 1 of 1
No of Print : 1

No	Description Part No/Item Code	Qty UOM	Unit Price (MYR)	Amount (MYR)
Reference No : PAL29-01 R13100037				
MM/S13110489				
1.	AGR00211 IBG OIL PALM BIOFERTILIZER - Malaysia Remarks: DELIVERY PERIOD: JUNE 2014	3,800 BOT @4LTR/BOT	345.00	1,311,000.00
GRAND TOTAL			MYR*****1,311,000.00	

The grand total of MYR*****1,311,000.00 is the nett amount for our Purchase Order No. MM/P13120409.
Thank you.

PO Number: MM/P13120409
Purchase Order 5th December
2013

RM 345/bottle x 3,800 bottles
IBG OP** = RM 1,311,000

Total = RM 1,311,000

** IBG OP (IBG Oil Palm Bio
Fertilizer) is product of IBG
Manufacturing Sdn. Bhd.

PLEASE CHOP SIGN & RETURN



Invoice To : Mafrica Maytrading Sdn Bhd
Delivery Period : 30/08/2014
Notes : Please state our Purchase Order No. & Ref on your
D.O. and Invoice.

Delivery To : Palmraya Pelita Meruan Plantation Site
5Km, Jalan Sungai Dihil, Off 72KM Sibul-Bintulu
Selangor Sarawak, Malaysia
Tel : +6084-897170 Fax : +6084-897172
Attn : Ms. Umi Ak Nyerapung

Prepared By :

Verified By :

Authorized By :

Wong Siaw Hui

Date: 8/12/13

Date:

Date: 9/12/13

IBG01