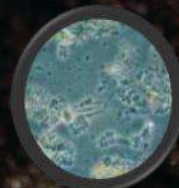
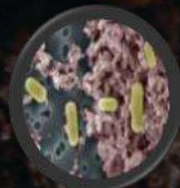
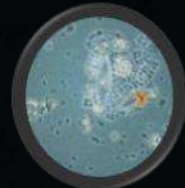
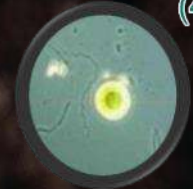




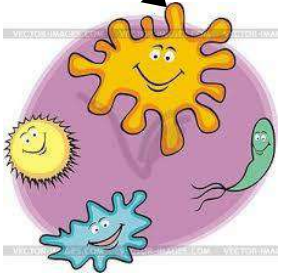
(473365-H)

IBG Bio Fertilizer Series

Sustainable Agriculture through
Innovative Biotechnology



What is inside the natural soil?



Beneficial microbes.



Fungi, actinomycete, small insect.



Organic matter.



Macro and micro minerals.



Water.

What is inside the natural soil?

1. Microbe.

- Decompose organic matter.
- Nutrient recycle.
- Humus formation.
- Nitrogen fixing.
- Promote plant's growth.

2. Organic matter.

- As a source of nutrient pool for plant.
- As a source food for bacteria.
- Recover soil nutrient.

What is inside the natural soil?

3. Macro and micro nutrient.

- Carbon, Hydrogen, Oxygen
- Nitrogen
- Phosphorus
- Potassium
- Calcium
- Magnesium
- Sulphur
- Manganese
- Copper
- Zinc
- Molybdenum
- Boron
- Chlorine
- Iron

Important for plant growth, food formation, etc.

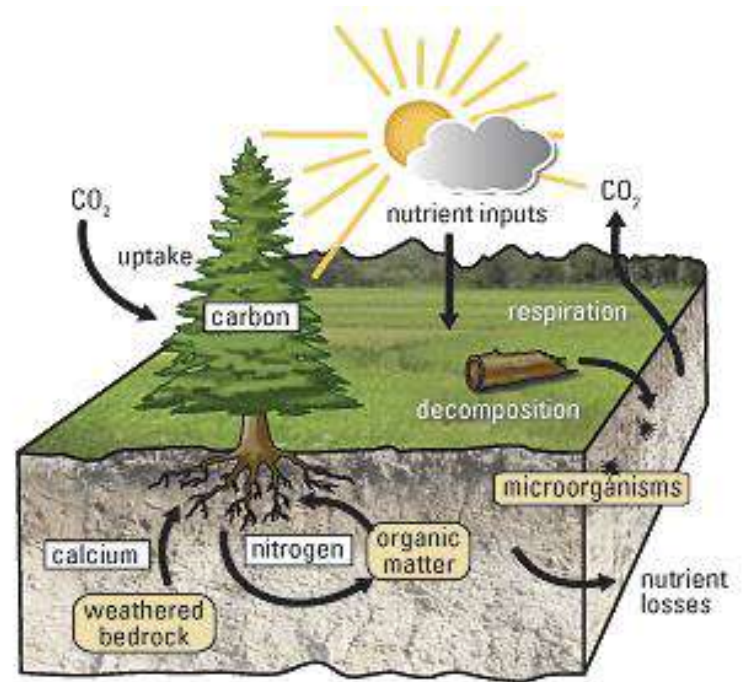
Why soil protection is important?

- Soil – provide moisture, nutrients, air and protection to the plant.
- Plant – Provide food and shelter to human.
- Human – but human provide non other than chemical fertilizer hence jeopardizing the soil health.

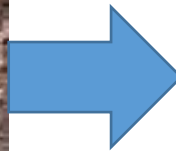
Why soil protection is important?

- When the soil was damaged due to acidification, its immune system will be weakened. An unhealthy soil will not produce a vibrant plant as the plant will suffer from a lot of disease. Hence the plant will not provide quality food to humans. Therefore, soil recovery and human's quality of life is important.

Virgin forest stage.



Plantation clearing stage.



The importance of chemical fertilizer.

- Soils contain natural reserves of plant nutrients, but these reserves are largely in forms unavailable to plants, and only a minor portion is released each year through biological activity or chemical processes. This release is too slow to compensate for the removal of nutrients by agricultural production and to meet crop requirements. The plant require 16 nutrients in order to grow well, this causing mass nutrient removal from the soil from which the nutrient has to be replenish for the plant to survive.

Chemical fertilizer and soil health.

- Therefore, chemical fertilizers are designed to supplement the nutrients already present in the soil. The use of chemical fertilizer, organic fertilizer or biofertilizer has its advantages and disadvantages in the context of nutrient supply, crop growth and environmental quality.

Pros and cons of chemical fertilizer.



© Can Stock Photo - csp3706410



Initial use.

Pros.

- Crops grows fast and big.
- Adequate nutrient.
- Support plant growth.
- Increase harvest yields.

Pros and cons of chemical fertilizer.

Cons.

- Toxicity and pollution.
- Results in depleted soil, and results in acidity.
- Interfere with natural soil ecology.



Prolong use.

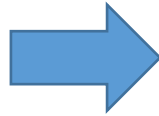
Damaged soil vs healthy soil.



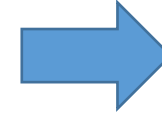
Type of fertilizer.



Chemical fertilizer.



Medicine.



Effect fast, but
a lot of
disadvantages.

- Prolonged use of chemical fertilizer = Prolonged use of medicine = Although is fast and efficient but a lot of disadvantages.

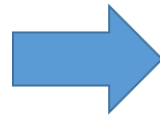


www.shutterstock.com - 170993270

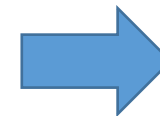
Type of fertilizer.



Organic elements.



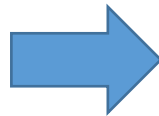
Traditional
Medicine.



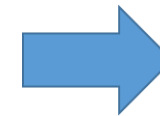
Effect slow, no
disadvantages.



Microbes.



Health supplements.

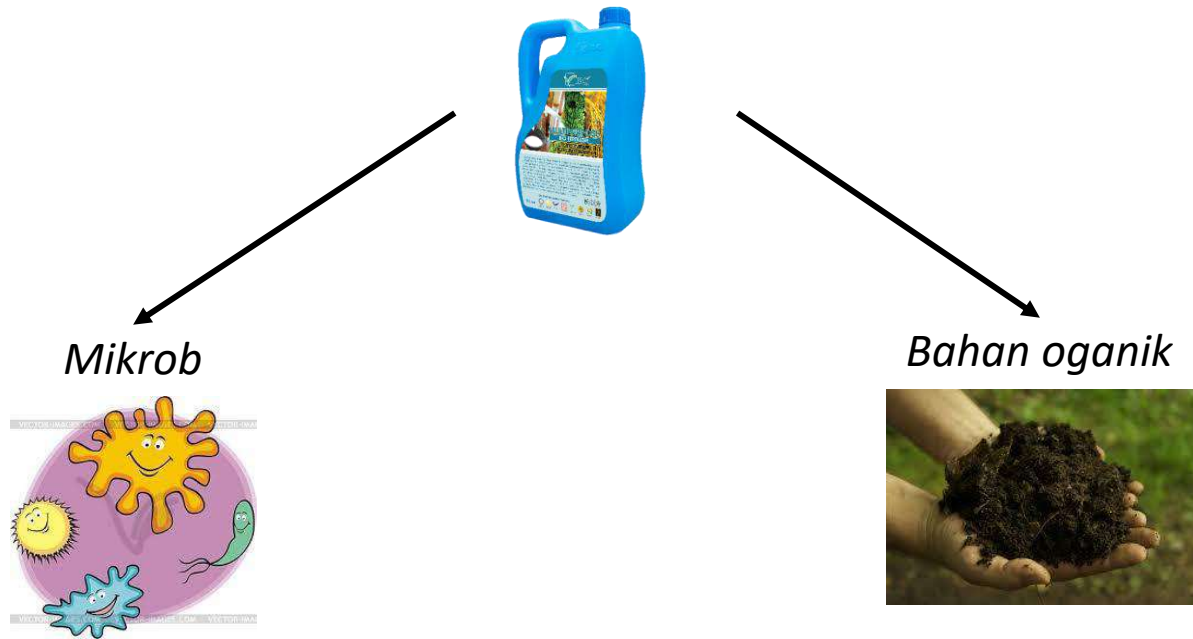


Relatively safe and
reliable, long-term
use is able repair
and protect the soil.

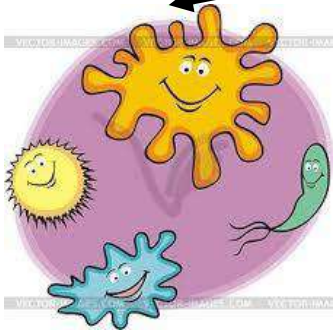
What is IBG biofertilizer



The best solution for human health



What is inside the IBG bio fertilizer?



Beneficial microbes of no less than 10^8 cfu/ml.



Aloe vera, seaweed extract, humic acid, amino acid, fish emulsify.

- Biofertilizer in the market has to contain minimum 10 million cfu/g bacteria in order to be classified as biofertilizer. With our technology, IBG biofertilizer has attain 100 million cfu/g of bacteria
- Moreover, microbes cannot survive alone without organic matter. It has to be complemented with organic matter and macro and micro nutrient in order to efficiently recover the soil.
- These two combination is equal to what is originally inside the soil. IBG biofertilizer is able to provide a holistic element for the plant to grow and absorb better.

IBG Manufacturing Sdn. Bhd. accredited by Standards Malaysia under accreditation number 494 for Chemical and Microbiology Tests

TEST REPORT

Customer: Production Department
IBG Manufacturing Sdn Bhd
No. 3, Jalan TPP 3,
Taman Perindustrian Putra,
47130 Puchong,
Selangor Darul Ehsan.

Lab Number : IBG-QC-02523
Date received : 10th July 2023
Date tested : 10th - 12th July 2023
Date reported : 12th July 2023


Page 1 of 1

Sample description : Liquid Biofertilizer
Sample marking : Durlan 05/07/23 MAS-F030-2307-01

Test parameter	Method	Unit	Results
Total plate count, PCA @ 37°C for 48 hours	In House Method, TM-IBG-03-001, based on AS 1766.1.3, 1991	cfu/g	1.1 x 10 ⁸
pH @ 23.0°C	In House Method, TM-IBG-02-004, based on pH meter	-	4.02
*Total Organic Matter	In House Method, TM-IBG-02-025, based on AOAC 967.05, MS 417: Part 2: 1994, Clause 3 & MS 417: Part 2: 1994, Clause 5	% ww	55.10

* Not accredited

Total plate count: 10⁷ cfu/g


LEE CHOON HOONG
Senior Microbiologist
BSc (Hons) in Biomedical Science


Dr. LINDA NG YIAN YIAN
Chief Technical Officer
BSc (Hons), MSc, PhD, FMIC
(IKM No.: F/0100/1958/89/92/13)

The results reported relate only to the items tested as received.
This test report shall not be reproduced except in full without the approval of the laboratory

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Sher Award 2007
Green International
Innovation Exhibition



SGS/01790

ISO/IEC 17025



SME PLATINUM
Recognised Excellence Award



SME PLATINUM
Recognised Excellence Award



Silver Award of
Biotechnology Asia 2008

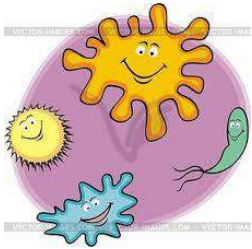


Golden Bull Award 2008
Outstanding SME



Model of Enterprise
Award 2014

Content of IBG bio fertilizer.



Beneficial microbes - Improve absorption and decompose organic matter, no less than 10^8 cfu/ml.



Aloe vera, seaweed extract, humic acid, amino acid, fish emulsify - Improve soil organic matter content.

Application of IBG bio fertilizer.

Dosage.

70 – 80%

Chemical fertilizer.

Please do take note that IBG biofertilizer is applied as replacement 20 – 30% from chemical fertilizer. So your material cost does not change after using IBG biofertilizer.

20 – 30%

IBG bio fertilizer.

Why choose IBG bio fertilizer?

- Increase plant productivity.
- Provide an economically viable support.
- Soil health maintenance.
- Effective in helping plant to absorb nutrients.
- Reduces the dosage of chemical fertilizers.
- Reduces soil-borne root diseases of plants.
- Save on fertilizer storage capacity.



A healthy person will less likely to get any disease.



A healthy plant will less likely to get any disease.







After the soil was treated with IBG bio fertilizer, microbes can help in organic matter decomposition and soil mineralization. It release the Nitrogen and Phosphorus during decomposition and thus the N, and P fertilizer can be reduced.

Biofertilizers: A novel tool for agriculture

Boraste A.¹, Vamsi K.K.², Jhadev A.³, Khairnar V.⁴
Gupta M.
S.V.P.M. Coll.
Rai foundations
Padmashree Dr. D.Y. Patil
V.P. Engin
Sankhu Maha
Dr. D.Y. Patil

The possible role of bio-fertilizers in agriculture

Original scientific paper
Suzana Marozsan¹, Szilvia Veres², Éva Gajdos³, Nor
... Corporation
... Agricultural and Techn
... Physiology.

Abstr
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Chapter 1

Potential and Possible Uses of Bacterial and Fungal Biofertilizers

Francesco Gentili
Ari Jumpponen

INTRODUCTION

During the past four decades we have witnessed the doubling of the human population and a concurrent doubling of food production (Vance, 2001). Plant nutrition has played a key role in this dramatic increase in demand for and supply of food. Increases in crop production have been made possible through the use of commercial man-made fertilizers. The use of nitrogen (N) fertilizer has increased almost ninefold and phosphorus (P) more than fourfold (Vance, 2001). The tremendous increase of N and P fertilization, in addition to the introduction of highly productive and intensive agricultural systems, has allowed these developments to occur at relatively low costs (Schultz et al., 1995; Vance, 2001). The increasing use of fertilizers and highly productive systems have also created environmental problems such as deterioration of soil quality, surface water, and groundwater (Schultz et al., 1995; Socolow, 1999).

Numerous research shows that the use of bio fertilizer does assist in plant growth and overall sustainable soil conservation

terrestrial ecosystems. A more comprehensive and complete view of the N cycle and impacts of N deposition at the global level can be found in Socolow (1999).

Community waste and sewage sludge provide an inexpensive and attractive alternative. One problem with the use of these sources of plant nutrition is their high content of heavy metals, which may have adverse effects on

RESEARCH

EFFECTS OF BIOFERTILIZERS COMBINED WITH DIFFERENT SOIL AMENDMENTS ON POTTED RICE PLANTS

Arshad Javaid^{1*}



BIOFERTILIZER AFFECTS YIELD AND YIELD COMPONENTS OF WHEAT

NASRIN GHADERI-DANESHMAND¹, ABDOLMAHDI BAKHSHANDEH² AND MOHAMMAD REZA ROSTAMI³

- 1- Postgraduate of Ramin University of agriculture and natural resources, Ahwaz, Khuzestan, Iran.
- 2- Professor of Ramin University of agriculture and natural resources, Ahwaz, Khuzestan, Iran.
- 3- Postgraduate of college of agriculture and natural resources of university of Tehran, Karaj, Iran.

*Corresponding Author Email: mr.rostami@ut.ac.ir

ABSTRACT: In order to study effects of biological fertilizers, chemical fertilizers and bacterial growth enhancers (BGRP) on yield and yield factors of wheat (*Triticum aestivum*) and to reduce chemical fertilizers and improve soil and plant nutrition, an experiment was carried out in research field of Agriculture and Natural Resources University of Ramin, Iran in crop year of 2009-2010. The experiment was performed in split plot-factorial design arranged in a complete randomized block design with three replications. In this study, chemical factor was the base plot in three levels (Control, half of local recommended and local recommended) and the biological fertilizer (Nitrosin and bio-phosphor) were the secondary factors with three levels (Control, 0.5 and 1 liter per hectare). Results indicate that the use of biological fertilizers lead to significant differences in grain number per spike, grain weight, biological yield and harvest index. Combined treatments of microorganisms (*Arx* bacteria and *Pseudomonas fluorescens*) and chemical fertilizers had the greatest impact on the studied traits. Analyze of variance suggest that highest yield of grain was achieved by complete use of all three fertilizers in recommended fertilizer rate compared to control treatment. Overall, the results showed that, biological fertilizers have a significant role in improving yield and yield components of wheat, and Bio-fertilizers with chemical fertilizers may be useful to increase the yield and reduce environmental pollution.

Key words: wheat, yield, yield components, Biofertilizer.

INTRODUCTION

Given the increasing world population, more than ever feel the need to increase food production. For this purpose, four solutions (increase in area under cultivation, yield per unit area, yield per unit of water, and yield per unit of fertilizer) are being sought.

While utilize Bio-fertilizers imposing a large population of effective microorganisms in the active field of root systems.

... (Socolow et al., 2005). Sustainable agriculture based on the Bio-fertilizers with purpose of significant reduction or elimination in the use of chemical inputs, is an optimal solution for overcoming these problems. To achieve sustainable agriculture in areas with limited resources, we need to use ways to reduce production costs and improves stability of yield.

... (Socolow et al., 2005). Sustainable agriculture based on the Bio-fertilizers with purpose of significant reduction or elimination in the use of chemical inputs, is an optimal solution for overcoming these problems. To achieve sustainable agriculture in areas with limited resources, we need to use ways to reduce production costs and improves stability of yield.

RM 420 million

...use less nitrogen-based fertilizer

Bayer bets on agro-biotech

It will jointly develop biological solutions to use less nitrogen-based fertiliser

BY P J HUFFSTUTTER

CHICAGO: Germany's Bayer AG, one of the world's biggest agricultural chemical companies, is joining a US\$100 million (RM420 million) bet that the next big breakthrough in crop fertilisers will be found inside a biological Petri dish.

Its Bayer LifeScience Center division, along with biotech firm Ginkgo Bioworks, is forming a start-up to focus on developing biological solutions to reduce the use of ni-

trogen-based fertiliser, or make farmers' use more efficient, company officials said this week.

The venture will be backed via a Series A investment from the two companies and hedge fund Viking Global Investors LP. The funding round closed on Wednesday. Bayer and Ginkgo Bioworks officials declined to discuss financial details or individual investment amounts.

The still unnamed business will focus on plant-based microbes, particularly finding ways for mi-

croorganisms to help plants and the soil assimilate nitrogen molecules from the air or other sources, Ginkgo Bioworks chief executive officer (CEO) Jason Kelly said in an interview.

The effort is part of a broader push in agricultural research to harness the microorganisms in plants and soil and, among other things, use them to improve crop yields or allow plants to thrive on lower amounts of fertiliser.

Reducing the amount of nitro-

gen fertiliser needed to feed plants could ease environmental concerns over water contamination from nitrogen fertiliser run-off and related greenhouse gas emissions, company officials said.

Michael Miille, a vice-president at Bayer Crop Science's biologics group, said launching this venture as a start-up was intended to keep it more nimble.

"Everything is designed for speed," said Miille, who will serve as interim CEO. — Reuters

IN BRIEF

VW CEO says has no plans to divide up the group

FRANKFURT: Volkswagen (VW) has no plans to follow local rival Daimler in considering changing the group's legal structure, its chief executive officer (CEO) said, even as the company undergoes the biggest transformation in its history. The world's largest vehicle maker by sales said on Monday it was stepping up the pace on its electric-car programme, announcing more than €20 billion (RM100 billion) of new investments over the next 12 years. Asked by reporters at the Frankfurt auto show whether he could imagine following rivals in looking at changing the group's structure, CEO Matthias Mueller said: "Others are always faster than

IBG Technologies

Through technologies, we provide:

Innovative solution through biotechnology

Comprehensive model from the combination of microbes, organic, chemical and trace elements

Various benefits

DISTINCTIVE ADVANTAGES

1. Improve soil organic matter utilization, thus reduce soil erosion
2. Improve transportation of nutrients by roots' natural secretion of growth factor elements by microbes
3. Minimize losses caused by run-off through the Phosphorus and Potassium Releasing Bacteria
4. Enhances plant growth
5. Increase inflorescence rate and the female ratio
6. Increase fruit weight and quality
7. Provide non-acidic nitrogenous fertilizer



IBG Manufacturing Sdn. Bhd.



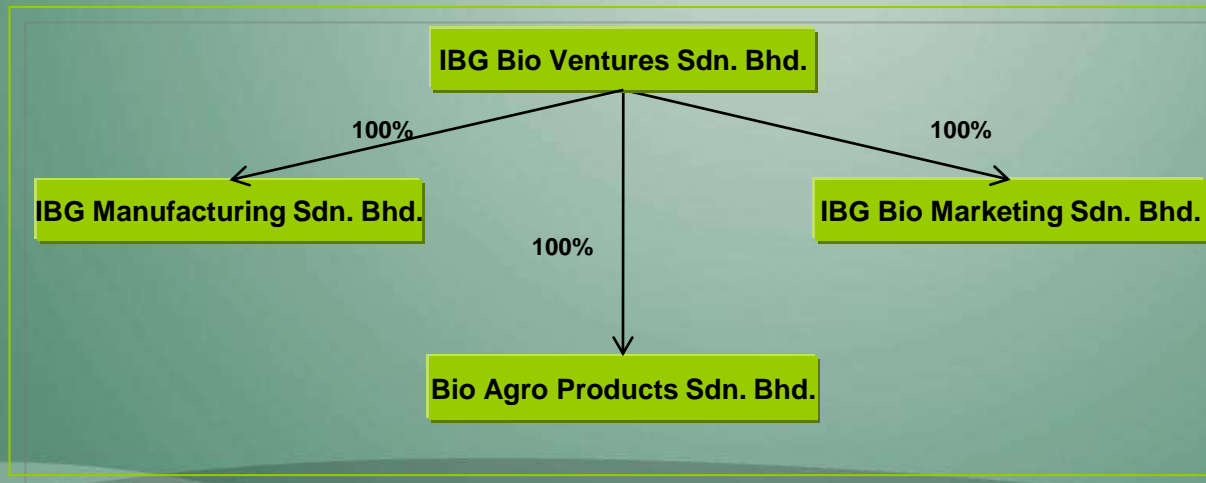


About IBG Manufacturing Sdn. Bhd.

IBG Manufacturing Sdn. Bhd. has its plant setup in Malaysia since 1998. It is incorporated in July 2004, under IBG Bio Ventures Sdn. Bhd. IBG Manufacturing paid up capital is RM 2 million.

Our philosophy :

“Innovative Biototechnology for Green world will ultimately benefit to our human kind ”



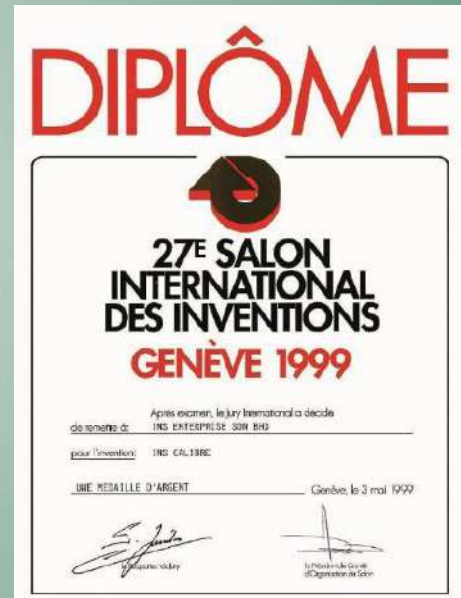
AWARDS & CERTIFICATIONS

®

Gold Medal Award in ITEX99' (Malaysia International Invention, Innovation & Industrial Design 1999) for the invention of Bio Fertilizer.



First Bio fertilizer Inoculants patent filling in Malaysia **PI20062236**



Silver Medal Award in 27th Geneva International Exhibition of Agricultural Invention & New Techniques 1999.

®



BIONEXUS – Obtained from **Malaysian Biotech Corporation** – IBG certified as an industry player within the national biotechnology focus zone. **Entitled to enjoy a 10 year 100% tax exemption.**



Silver Award in Bio Technology Asia 2006 (3rd International Biotechnology Trade Exhibition, Conference & Awards)



ISO 9001 certified UKAS SGS; ISO 17025 Accredited Laboratory (For Chemical and Microbiology Laboratory).





ANUGERAH & PENSIJILAN



2011 International Standard Quality Award untuk kualiti produk



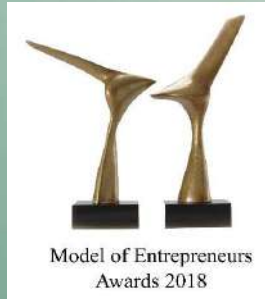
2016 Outstanding Achievers Award dalam Platinum Business Award – dalam SME Malaysia



2016 Product & Services Excellent Award dalam Sin Chew Business Excellence Award



2018 Outstanding Fertilizer Quality Product Award dalam 4th Malaysia Agro Excellence Award.



2018 Model of Entrepreneurs Awards.



2020 Philippine Halal certificate



2023 Malaysia Technology Expo Gold Award. (Kerjasama dengan MPOB)

Manufacturing and fermentor –
certified with ISO 9001





Manufacturing and fermentor – certified with ISO 9001



Laboratory – certified with ISO/IEC
17025



RESEARCH AND DEVELOPMENT

IBG Manufacturing Sdn Bhd has built the most hi-tech R & D Centre to back its strong R & D initiatives. The R & D centre focuses on cutting edge technology, from extensive research to the development of world-class biofertilizer products with self-owned intellectual property rights and great marketing potential.

We have established experiment fields and collaboration with well-known research institutes in Malaysia and China as an effort to ensure continuous products upgrade and innovations.



Method of application for Paddy



Day (-) 7: 100 ml IBG/knapsack x 10 knapsacks, total 1,000 ml IBG for 1 ha
Day 25: 100 ml IBG/knapsack x 10 knapsacks, total 1,000 ml IBG for 1 ha
Day 50: 150 ml IBG/knapsack x 10 knapsacks, total 1,500 ml IBG for 1 ha
Day 75: 150 ml IBG/knapsack x 10 knapsacks, total 1,500 ml IBG for 1 ha

24 3 2003

Rumusan
Summary



1

Melindungi akar untuk
Pertumbuhan berterusan.
***Protects roots for continuous
development***

Memperbaiki struktur tanah
Dan pH tanah.
***Improves the soil structure and
Coordinates soil pH***

3

Great Effect

2

Meningkatkan berat 1000 biji.
Increase weight of 1000 grain

CONFIDENTIAL

COLLABORATION AGREEMENT

BETWEEN



**MALAYSIAN AGRICULTURAL RESEARCH AND
DEVELOPMENT INSTITUTE (MARDI)**

AND

IBG MANUFACTURING SDN. BHD.

**IN RELATION TO THE DEVELOPMENT OF IBG
MULTIPURPOSE BIO FERTILIZER FOR RICE
CULTIVATION**

1

CONFIDENTIAL



FINAL REPORT ON

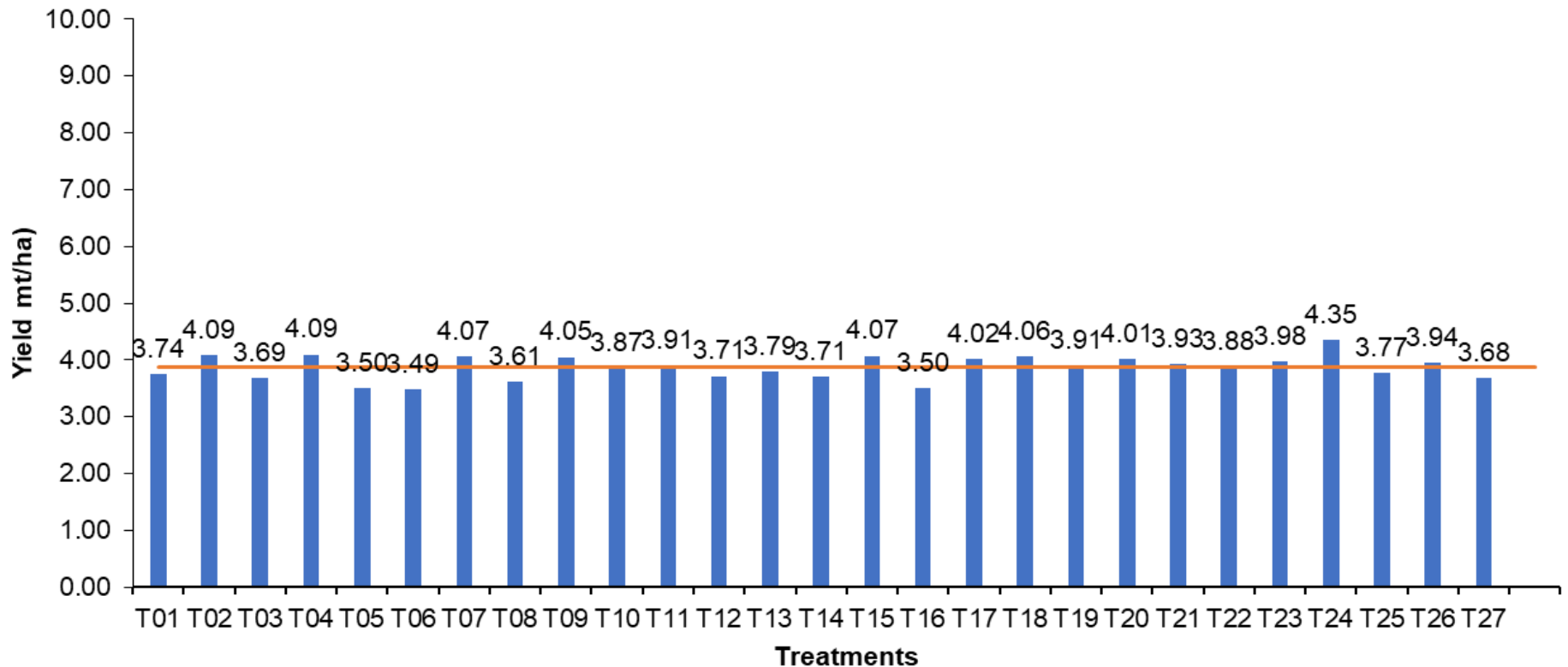
DEVELOPMENT OF IBG MULTIPURPOSE BIO FERTILIZER FOR RICE CULTIVATION



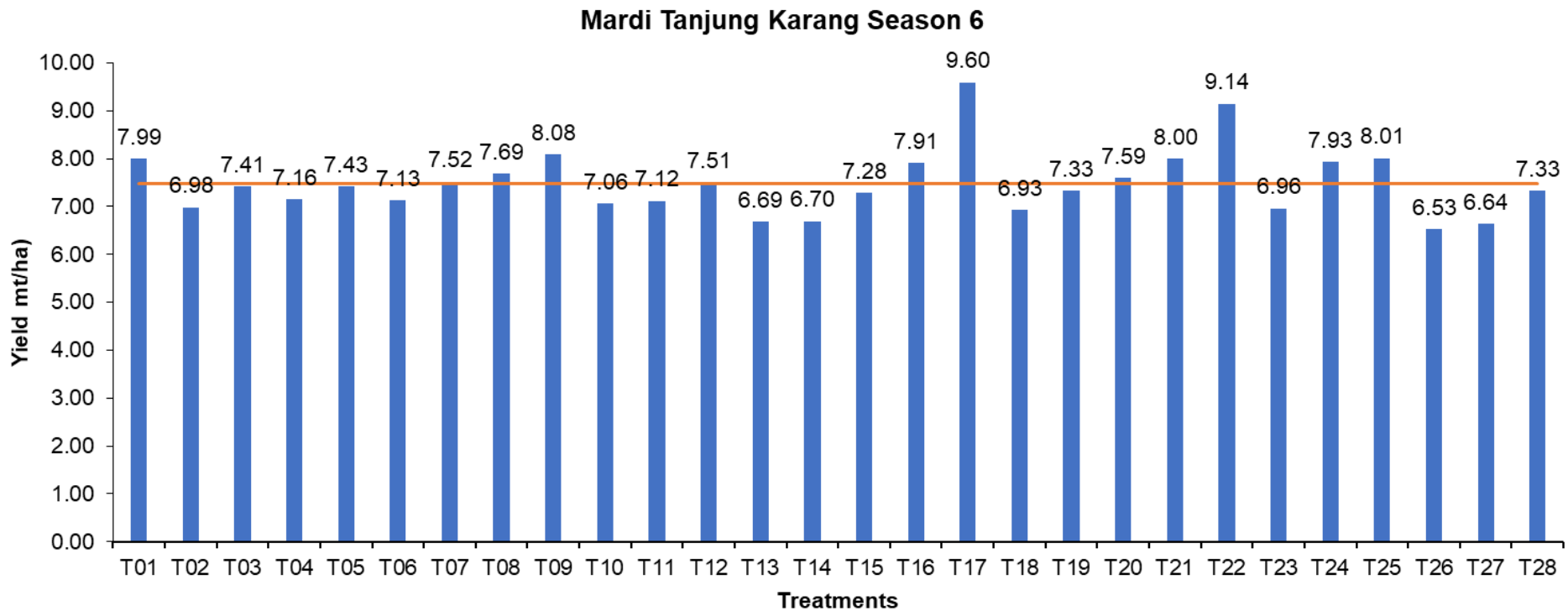
15th February 2017 – 30th May 2020 (6 Seasons)

Effect of IBG Multipurpose Biofertilizer on Yield.

Mardi Tanjung Karang Season 1



Effect of IBG Multipurpose Biofertilizer on Yield.



Ringkasan Laporan Kajian

Satu Perjanjian Kolaborasi untuk menjalankan kajian di antara MARDI dan IBG Manufacturing Sdn. Bhd. telah dimeterai pada 11 April 2017. Kajian ini dilaksanakan di MARDI Tanjung Karang selama 6 musim penanaman dalam tempoh jangkamasa 40 bulan. Objektif utama kajian ini ialah untuk menentukan kombinasi IBG Multipurpose Bio Fertilizer dan baja subsidi untuk keperluan pembajaan tanaman padi. **Dapatan kajian menunjukkan aplikasi rawatan T17 (kombinasi nisbah 50:50 (IBG:baja subsidi) dengan kadar 5 liter/ha merupakan rawatan yang terbaik kerana trend hasil yang tertinggi secara ketara pada musim 3, 4 dan 6. Perbezaan peningkatan hasil bagi musim terakhir iaitu ke-6 adalah sebanyak 40%** berbanding dengan T26 (plot kawalan tiada pembajaan). Bilangan tangkai turut dipengaruhi secara ketara oleh rawatan dan mempunyai kolerasi positif dengan hasil. Penggunaan produk IBG juga didapati turut **meningkatkan populasi** mikrob di dalam tanah yang turut mempengaruhi peningkatan positif terhadap nitrogen, fosforus, kalium dan konduktiviti di dalam tanah.



IBG MANUFACTURING SDN. BHD. (473365-H)
 GST No: 001336541184
 No. 3, Jalan TPP 3, Taman Perindustrian Putra, 47130 Puchong, Selangor Darul Ehsan,
 Tel: 603 -8068 2875 Fax: 603 -80521303 E-mail: info@ibgv.com.my

Before

TEST REPORT

Customer: Agronomy Department
 IBG Manufacturing Sdn Bhd
 No. 3, Jalan TPP 3,
 Taman Perindustrian Putra,
 47130 Puchong,
 Selangor Darul Ehsan.


Lab Number : IBG-QC-83K/17
 Date received : 4th August 2017
 Date tested : 5th August 2017
 Date reported : 7th August 2017

Page 1 of 1

Sample description : Soil
 Sample marking : TKS0 R2 T10

Test parameter	Method	Unit	Results
Total plate count, PCA @ 37°C for 48 hours	In House Method, TM-IBG-03-001, based on AS 1768.1.3, 1991	cfu/g	4.4 x 10 ⁵

4.4 x 10⁵ cfu/g


LEE CHOON HOONG
 Microbiologist cum R&D Executive
 BSc (Hons) in Biomedical Science

The above analysis is based solely on the sample(s) submitted by the customer.
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IBG MANUFACTURING SDN. BHD. (473365-H)
 GST No: 001336541184
 No. 3, Jalan TPP 3, Taman Perindustrian Putra, 47130 Puchong, Selangor Darul Ehsan,
 Tel: 603 -8068 2875 Fax: 603 -80521303 E-mail: info@ibgv.com.my

After

TEST REPORT

Customer: Agronomy Department
 IBG Manufacturing Sdn Bhd
 No. 3, Jalan TPP 3,
 Taman Perindustrian Putra,
 47130 Puchong,
 Selangor Darul Ehsan.


Lab Number : IBG-QC-07220
 Date received : 17th September 2020
 Date tested : 17th-19th September 2020
 Date reported : 19th September 2020

Page 1 of 1

Sample description : Soil
 Sample marking : TKS6 R2 T10

Test parameter	Method	Unit	Results
Total plate count, PCA @ 37°C for 48 hours	In House Method, TM-IBG-03-001, based on AS 1768.1.3, 1991	cfu/g	3.8 x 10 ⁶

3.8 x 10⁶ cfu/g


LEE CHOON HOONG
 Microbiologist cum R&D Executive
 BSc (Hons) in Biomedical Science

The results reported relate only to the items tested as received.
 This test report shall not be reproduced except in full without the approval of the laboratory.

An Innovation in Biotechnology for Green World www.ibgbiofertilizer.com.my



APPLIED AGRICULTURAL RESOURCES SDN. BHD.

(No. Syarikat : 90455-D)

Soil Analysis Results

Date : 09/09/2020
 Crop : OUTSIDE
 Estate : IBG MANUFACTURING

Date Sampled : 30/07/2020
 Date Received : 01/08/2020
 Date Tested : 12/08/2020

Lab. Reference	Sample/Block	Area	Horizon /Depth (cm)	pH in Water (2:5)	Org. C (%)	N (%)	C/N	P (ppm)		Exchangeable Cations (m.e. %)				C.E.C. NH4OAC method (m.e.%)	Conductivity (µS/cm)	Mechanical Analysis (%)						
								Total	Acid fluoride soluble	K	Ca	Mg	Na			Clay	F Silt	C Silt	F Sand	C Sand	Gravel	
SC20/IBG 10	TKS1 R2T10			5.36	2.54	0.33	7.7	488	31.7	1.31	12.59	16.04	2.35	24.8	511							

Date : 11/09/20

[Signature]
 Chemist

APPLIED AGRICULTURAL RESOURCES SDN. BHD.

(No. Syarikat : 90455-D)

Soil Analysis Results

Date : 01/10/2020
 Crop : OUTSIDE
 Estate : IBG MANUFACTURING S/B

Date Sampled : 30/07/2020
 Date Received : 04/08/2020
 Date Tested : 28/08/2020

Lab. Reference	Sample/Block	Area	Horizon /Depth (cm)	pH in Water (2:5)	Org. C (%)	N (%)	C/N	P (ppm)		Exchangeable Cations (m.e. %)				C.E.C. NH4OAC method (m.e.%)	Conductivity (mS/cm)	Mechanical Analysis (%)						
								Total	Acid fluoride soluble	K	Ca	Mg	Na			Clay	F Silt	C Silt	F Sand	C Sand	Gravel	
SC20/IBG 37	TKS6 R2T10			5.88	2.85	0.76	3.8	3035	359.5	17.02	10.51	16.06	3.19	20.1	4.25							

Date : 01/10/20

[Signature]
 Chemist

TK Season 1 (Before) R2T10 (30%)

pH 5.36; Organic C 2.54%; Total N 0.33%; Total P 488.00 ppm; Avail P 31.70 ppm;
 Avail K 1.31 meq; Avail Ca 16.04 meq; Avail Mg 12.59 meq; CEC 24.80 meq

TK Season 6 (After) R2T10 (30%)

pH 5.86; Organic C 2.85%; Total N 0.76%; Total P 3035.00 ppm; Avail P 359.50 ppm;
 Avail K 17.02 meq; Avail Ca 16.06 meq; Avail Mg 10.51 meq; CEC 20.10 meq



**PRODUCT COMMERCIALIZATION
AGREEMENT**

BETWEEN

**MALAYSIAN AGRICULTURAL RESEARCH AND
DEVELOPMENT INSTITUTE
(MARDI)**

AND

**IBG MANUFACTURING SDN. BHD.
(REG. NO.: 199801017236 (473365-H))**

IN RELATION TO THE IBG PADDY BIO FERTILIZER

CONFIDENTIAL

This Product Commercialization Agreement dated 8th September 2017 (hereinafter referred to as this "Agreement").



BETWEEN

MALAYSIAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE a statutory body incorporated in Malaysia under the Malaysian Agricultural Research and Development Institute Act 1969 [Act 11] and having its headquarters office at MARDI Headquarters, Persiaran MARDI-UPM, 43400 Serdang, Selangor Darul Ehsan, (hereinafter referred to as "MARDI") of the one part;

AND

IBG MANUFACTURING SDN. BHD. (Company Registration No.: 199801017236 (473365-H)) a business registered under the law of Malaysia and having its registered address at Suite 9-13A, Level 9, Wisma UOA II, Jalan Pinang, 50450, Kuala Lumpur, Wilayah Persekutuan and its business address at No. 3, Jalan TPP3, Taman Perindustrian Putra Puchong, 47130, Selangor (hereinafter referred to as "the Company") on the other part.

MARDI and the Company are hereinafter referred to as "the Parties" collectively and each as "the Party".

WHEREAS:

- A. MARDI and the Company has entered into the Collaboration Agreement in relation to the "Development of IBG Multipurpose Bio Fertilizer for Rice Cultivation" dated 11 April 2017 (hereinafter referred to as the "Collaboration Agreement"). Pursuant to Clause 13 of the Collaboration Agreement, the Parties agree that any future commercialization of IBG Multipurpose Bio Fertilizer in relation to the rice cultivation shall be formalized and secured in a separate written agreement detailing the rights and responsibilities of the Parties, including any financial commitments (if any).
- B. Pursuant to the above, the Company is desirous to produce, market, distribute and sell the IBG Multipurpose Bio Fertilizer for rice cultivation in any territory / country in the world and MARDI agrees for the Company to lead the commercialization of the IBG Multipurpose Bio Fertilizer subject to the terms and conditions as stated in this Agreement.
- C. For the purpose of the Company commercializing the IBG Multipurpose Bio Fertilizer pursuant to this Agreement, both Parties agree to name and commercialize the IBG Multipurpose Bio Fertilizer for rice cultivation as "IBG Paddy Bio Fertilizer" (hereinafter referred to as "the Product") subject to the terms and conditions hereinafter set forth in this Agreement.

CONFIDENTIAL

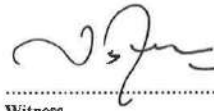
CONFIDENTIAL

IN WITNESS WHEREOF, the Parties have executed this Agreement on the dates indicated above.

SIGNED by for and on behalf of
**MALAYSIAN AGRICULTURAL RESEARCH
AND DEVELOPMENT INSTITUTE**



.....
**DATO' DR. MOHAMAD ZABAWI BIN ABDUL
GHANI**
Designation: Director General



.....
Witness
TAPSIR BIN SERIN
Designation: Deputy Director General

SIGNED by for and on behalf of
IBG MANUFACTURING SDN. BHD.
Company Registration No.: 199801017236
(473365-II)



.....
DATO' YEAT SIAW PING
NRIC No: 630702-08-6037
Designation: Group CEO



.....
Witness
YEAT NAI JIN
NRIC No: 911201-14-5503
Designation: Marketing Manager

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Mardi Tanjung Karang



Mardi Seberang Perai



Kilang Beras Rakyat Sekinchan Sdn. Bhd.



May, 2022 7.84 mt/ha

Kesan di Tanjung Piandang, Perak

Paddy Gallery in Tanjung Piandang, Perak



May, 2002 5.5 mt/ha
Jan, 2003 7.2 mt/ha

Kesan di Chui Chak, Perak
Paddy gallery in Chui Chak, Perak

Hasil di Chui Chak
memperoleh 7 ~ 9 mt/ha.
Masalah tumbang menjadi
kurang.

*The yield for every season is
In the range of 7 ~ 9 mt/ha.
Problems such as collapse
has reduced*



Kesan di Sekinchan, Selangor

Paddy Gallery from Sekinchan, Selangor



May, 2002	10.63 mt/ha
Feb, 2003	11.03 mt/ha

Research outcome in Karangmalang and Kemuten, Kabupaten Brebes, Indonesia

(by: DINAS PERTANIAN KEHUTANAN DAN KONSERVASI TANAH, 2001)

Abbrev.	Response	Ingredient	Karangmalang	Kemuten
P0	100% dosage of chemical fertilizer (CH)	300kg urea/ha 100kg ZA/ha 100kg SP-36/ha 100kg KCl/ha	4.28 mt/ha	6.06 mt/ha
P1	50% of CH 50% of IBG Biofertilizer	150kg urea/ha 50kg ZA/ha 50kg SP-36/ha 50kg KCl/ha 2 liter IBG Biofertilizer/ha	4.21 mt/ha	7.10 mt/ha
P2	75% of CH 75% of IBG Biofertilizer	225kg urea/ha 75kg ZA/ha 75kg SP-36/ha 75kg KCL/ha 3 liter IBG Biofertilizer/ha	5.56 mt/ha	6.77 mt/ha
P3	100% of IBG	4 liter IBG Biofertilizer/ha	6.20 mt/ha	7.73mt/ha
Production on offside of experiment plot			4.16 mt/ha	7.33mt/ha

(spacing: 2.5 x 2.5 cm)

Research outcome in Desa Jatipancur by PKPP

Response	Dosage	Location	Yield/ha
100% IBG Bio fertilizer	3.5 liter/ha	Sukarma, Saluyu plantation	11.01 mt/ha
IBG Bio fertilizer + supplement	2 liters/ha	Ado Suganda, Sukamulya plantation	8.40 mt/ha
	75 kg of Urea 50 kg of TCP – 36	Astami, Siundak plantation	8.00 mt/ha

Philippine Testimonial



Fertilizer Used: 3 liters IBG Bio-Fertilizer + 3 Bags 17-0-17 + 1 Bag 21-0-0

Variety: Rice M-3 (Hi-Breed)
Year 2008

Result: 8,710 kg/ha

Owner: Vilma Garzon, Kabacan, North Cotabato



Fertilizer Used: 2 liters IBG Bio-Fertilizer + Chemical Fertilizer

Variety: Rice M-3 (Hi-Breed)

Result: 8.70 mt/ha

Owner: Vilma Garzon, Kabacan, North Cotabato

Philippine Testimonial



Fertilizer Used: 3 liters IBG Bio-Fertilizer + 2 Bags Urea (46-0-0)

Variety: Rice M-11 Year 2008

Result: 10,218.90 kg/ha

Planting Time: November 2008 (*Wet Season*)

Owner: Vilma Garzon, Kabacan, North Cotabato



Fertilizer Used: 1 liters IBG Bio-Fertilizer + 1 Bag Urea (46-0-0) + 2 Bags 14-14-14

Variety: Rice M-7 (HI BREED)

Remarks: w/ Chemical Fert - harvested 3.35 mt/ha; w/ IBG - harvested 7.04 mt/ha

Owner: Manuel Quilantang, Ormoc City

Cambodia Testimonial



Cambodia Testimonial



Cost analysis

Day after planted	IBG Bio fertilizer (RM 345/4L)	Cost/ha
(-)7 days	IBG 100 ml/ks* x 10 knapsacks/ha	RM 86.25
25 days	IBG 100 ml/ks* x 10 knapsacks/ha	RM 86.25
50 days	IBG 150 ml/ks* x 10 knapsacks/ha	RM 129.38
75 days	IBG 150 ml/ks* x 10 knapsacks/ha	RM 129.38
Total cost/ha		RM 431.25

* For paddy 120 days mature; For paddy 90 days mature, IBG bio fertilizer applied on day 15, 35, 55 DAP.

Chemical fertilizer dosage are applied according to estate decision.



Thank you

IBG Manufacturing Sdn. Bhd.

Address: No. 3, Jalan TPP 3,
Taman Perindustrian Putra,
47130 Puchong,
Selangor Darul Ehsan.

Tel No.: 603 – 8066 2875

Fax No.: 603 – 8052 1303

Coordinate: N 2.971074, E 101.575499 (N 2°58'15.8664", E 101°34'31.7958")

Website: www.ibgbiofertilizer.com.my/www.ibgv.com.my

Email: info@ibgv.com.my/siawping@ibgv.com.my