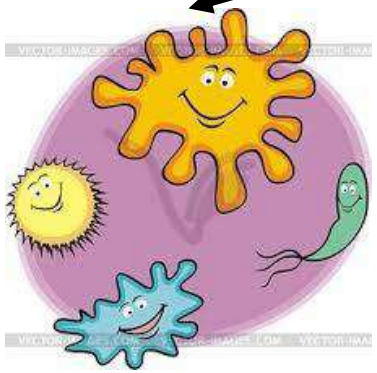
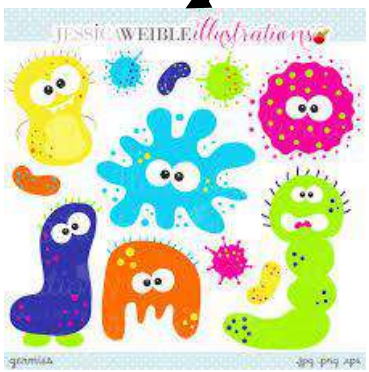

IBG®
(473365-H)
Siri Baja bio IBG
Pertanian lestari melalui Bioteknologi Inovatif

Apa yang terdapat dalam tanah semula jadi?

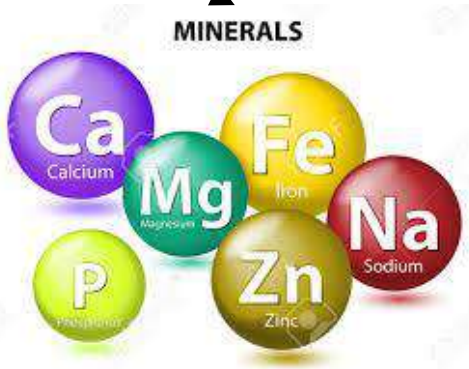


Mikrob berfaedah



Kulat, actinomycete, serangga kecil

Bahan organik.



Mineral macro dan mikro.

Air $_2$

Apa yang terdapat dalam tanah semula jadi?

1. *Mikroorganisma.*
   - *Penguraian bahan organic.*
   - *Kitaran nutrient.*
   - *Pembentukan humus.*
   - *Pengikatan Nitrogen.*
   - *Membantu tumbesaran.*

2. *Bahan organic.*
   - *Sebagai sumber nutrien tumbuhan.*
   - *Sebagai sumber makanan untuk bacteria.*
   - *Memulihkan nutrien tanah.*

Apa yang terdapat dalam tanah semula jadi?

3. *Nutrient makro dan mikro*.

- *Carbon, Hidrogen, Oksigen*
- *Nitrogen*
- *Fosforus*
- *Kalium*
- *Kalsium*
- *Magnesium*
- *Sulfur*
- *Mangan*
- *Tembaga*
- *Zink*
- *Molybdenum*
- *Boron*
- *Klorin*
- *Besi*

Penting untuk tumbesaran tumbuhan, membentuk makanan dan sebagainya.

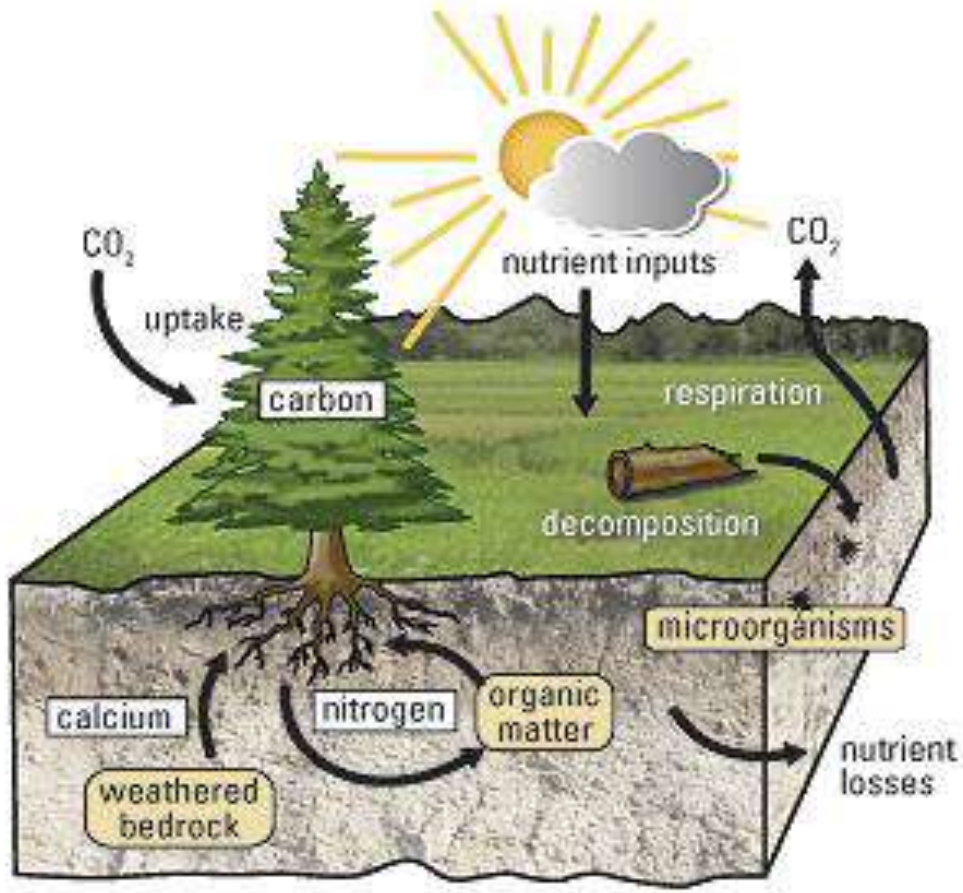
Kenapa perlindungan tanah adalah penting?

- *Tanah – memberi sumber air, nutrien, udara dan perlindungan kepada tumbuhan.*
- *Tumbuhan – memberi sumber makanan dan perlindungan kepada manusia.*
- *Manusia – tetapi manusia hanya cuma merosakkan tanah dengan baja kimia.*

Kenapa perlindungan tanah adalah penting?

- *Apabila tanah menjadi rosak disebabkan oleh pengasidan tanah, imunisasi tanah akan menjadi lemah. Tanah yang lemah tidak akan menghasilkan tanaman yang baik dan tanaman itu akan mengalami banyak penyakit. Tanaman itu tidak akan menghasilkan makanan yang berkualiti kepada manusia. Jadi pemulihan tanah dan kualiti hidup manusia adalah penting.*

Peringkat hutan dara.



Peringkat pembukaan tanah.

Kepentingan baja kimia

- *Tanah mengandungi simpanan semula jadi nutrien tumbuhan, tetapi sebahagian besarnya simpanan ini adalah dalam bentuk yang tidak tersedia kepada tumbuh-tumbuhan, dan hanya sebahagian kecil dilepaskan setiap tahun melalui aktiviti biologi atau proses kimia. Proses ini adalah terlalu lambat untuk mengimbangi penyingkiran nutrien oleh pengeluaran pertanian dan untuk memenuhi keperluan tanaman.*

Kepentingan baja kimia.

- *Oleh itu, baja kimia direka untuk menambah nutrien sudah ada di dalam tanah. Penggunaan baja kimia, baja organik atau biobaja mempunyai kelebihan dan kekurangannya dalam konteks bekalan nutrien, pertumbuhan tanaman dan kualiti alam sekitar.*

Kebaikan dan keburukan baja kimia.

Permulaan.

<u>Kebaikan.</u>

- *Tanaman tumbuh dengan pantas dan besar.*
- *Nutrien yang mencukupi.*
- *Sokongan pertumbuhan.*
- *Meningkatkan hasil tuaian.*

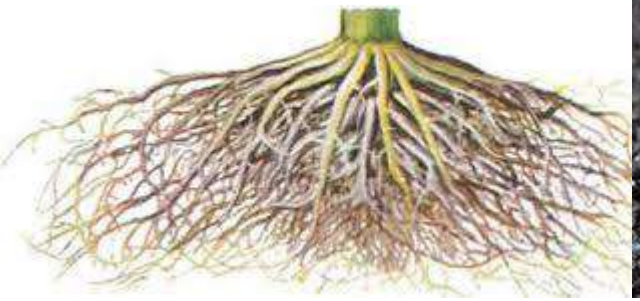
Kebaikan dan keburukan baja kimia.

<u>Keburukan.</u>

- *Ketoksikan dan pencemaran.*
- *Kerosakan tanah dan menyebabkan tanah berasid.*
- *Mengganggu ekologi tanah semula jadi.*

Penggunaan beterusan.

Tanah yang rosak vs tanah yang sihat.



Jenis baja.

Baja kimia.

Ubat doktor.

Kesan yang cepat, tetapi banyak kelemahan.

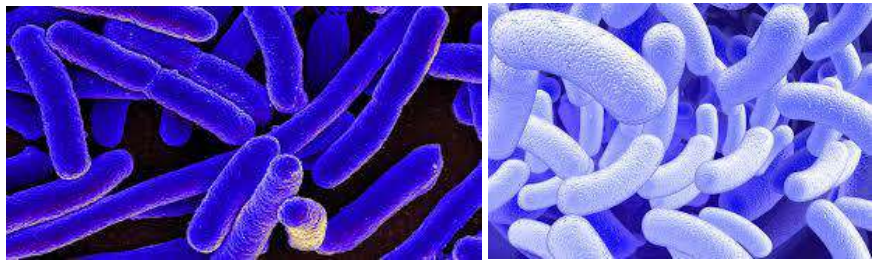
- *Penggunaan berpanjangan baja kimia = Penggunaan ubat yang berpanjangan = Walaupun cepat dan berkesan, tetapi mempunyai banyak kelemahan*.

Jenis baja.

Bahan organik.

Ubat tradisional.

Kesan perlahan, tidak mempunyai kelemahan.



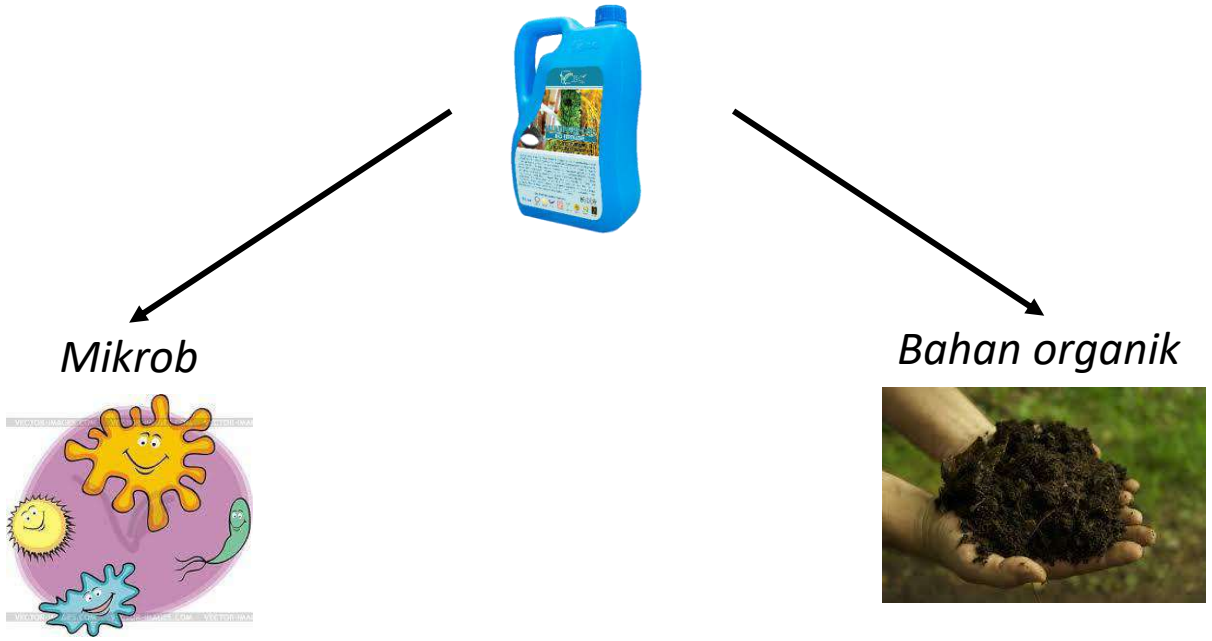
Mikrob.

Suplemen.

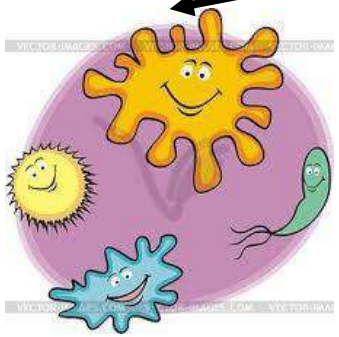
Lebih selamat dan boleh dipercayai, penggunaan jangka panjang dapat membaiki dan melindungi tanah.

Apa itu baja bio IBG

Cara yang terbaik untuk pemulihan tanah.



Apa yang terdapat di dalam baja bio IBG?



Mikrob berfaedah tidak kurang daripada 10^8 cfu/ml.

Aloe vera, ekstrak rumpai laut, asid humik, asid amino, emulsifi ikan.

- *Baja bio dalam pasaran mesti mengandungi minimum 10 juta cfu/g bacteria untuk dikelaskan sebagai baja bio. Dengan teknologi kami, baja bio IBG telah mencapai 100 juta cfu/g bacteria.*

- *Mikrob tidak boleh hidup bersendirian tanpa bahan organik, ia perlu dilengkapi dengan bahan organik dan nutrien makro dan mikro untuk memulihkan tanah dengan berkesan.*

- *Dua kombinasi ini adalah serupa dengan element dalam tanah yang semulajadi. Baja bio IBG dapat membekalkan elemen yang menyeluruh untuk tumbuhan untuk tumbuh dan menyerap lebih baik.*

IBG MANUFACTURING SDN. BHD. 199801017236 (473365-H)
No. 3, Jalan TPP 3, Taman Perindustrian Putra, 47130 Puchong, Selangor Darul Ehsan.
Tel: +603 - 8066 2875 Fax: +603 - 8052 1303 E-mail: info@ibgv.com.my

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 : Durian 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	1.1×10^8
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	% w/w	55.10

* Not accredited

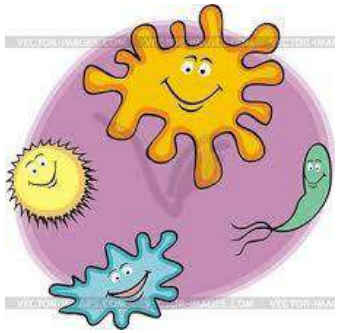
Jumlah kiraan bacteria: 10^7 cfu/g

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)

ISO/IEC 17025
SG08/01750

Rumusan baja bio IBG.



Mikrob berfaedah - Meningkatkan penyerapan dan mengurai bahan organik, tidak kurang daripada 10^8 cfu/ml.

Aloe vera, ekstrak rumpai laut, asid humik, asid amino, emulsifi ikan – Meningkatkan kandungan bahan organik tanah.

Aplikasi baja bio IBG.

Kadar.

70 – 80%

Baja kimia.

Harap perhatikan bahawa baja bio IBG digunakan sebagai pengganti 20 - 30% dari baja kimia. Oleh itu, kos bahan anda tidak berubah setelah menggunakan baja bio IBG.

20 – 30%

Baja bio IBG.

Mengapa pilih Baja Bio IBG

- Meningkatkan produktiviti tanaman.
- Memberi sokongan yang berdaya maju dari segi ekonomi.
- Mengekalkan kesihatan tanah.
- Berkesan dalam membantu tumbuhan untuk menyerap nutrien.
- Mengurangkan kadar baja kimia.
- Mengurangkan penyakit akar tumbuh-tumbuhan.
- Menjimatkan kapasiti stor baja.

Seseorang yang sihat jarang mendapat apa-apa penyakit.

Tanaman yang sihat jarang mendapat apa-apa penyakit.

Setelah 3 tahun menggunakan baja bio IBG

Setelah 3 tahun menggunakan baja bio IBG

Selepas tanah telah dirawat dengan Baja Bio IBG, mikrob boleh membantu dalam penguraian bahan organik dan dalam
mineralisasi tanah. Ia melepaskan Nitroge n dan Fosforus semasa penguraian dan dengan itu baja N dan P dapat dikurangkan.

International Journal of Microbiology Research, ISSN: 0975-5276, Volume 1, Issue 2, 2009, pp-23-31

Biofertilizers: A novel tool for agriculture

Boraste A.[1], Vamsi K.K.[2], Jhadav A.[3], Khairnar [illegible]
Gupta M.
[1]S.V.P.M. Coll
[2]Rai foundations
[3]Padmashree Dr. D.Y. P
[4]V.V.P. Engir
[5]Sindhu Maha
[6]Dr. D. Y. Pat

Original scientific paper

The possible role of bio-fertilizers in agriculture

[illegible]ianna Marozsán[1], Szilvia Veres[2], Éva Gajdos[2], Nór

[illegible]stry Corporation,
[illegible]gricultural and Techr
[illegible]hysiology,

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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 groundwat
as air pollution, reduced biodiversity, and suppr
(Schultz et al., 1995; Socolow, 1999
Environmental
be ei
aged
and d
Bosch
in airb
terrestrial ecosystems [illegible] and N pollution [illegible] combustion of fossil fuel [illegible] cification

RESEARCH

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

Arshad Javaid[1]*

CHILEANJAR

International Journal of Agriculture: Research and Review. Vol., 2 (6), 699-704, 2012
Available online at http://www.ecisi.com
ISSN 2228-7973 ©2012 ECISI Journals

ECISI

BIOFERTILIZER AFFECTS YIELD AND YIELD COMPONENTS OF WHEAT

NASRIN GHADERI-DANESHMAND[1], ABDOLMAHDI BAKHSHANDEH[2] AND MOHAMMAD REZA ROSTAMI[3]*

1- Postgraduate of Ramin University of agriculture and natural resources, Ahwaz, Khouuzestan, Iran.
2- Professor of Ramin University of agriculture and natural resources, Ahwaz, Khouuzestan, 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 (PGRP) 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 total local recommended) and the biological fertilizer (Nitroxin 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 (Aztv bacteria and Pesudomonas fluorescent) 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 time [illegible]

While utilize Bio-fertilizers importing a large population of effective microorganisms in the active field of root system [illegible]

(Khavazi *et al.*, 2005) [illegible] yield per unit area [illegible] developed countries and [illegible] especially in

Banyak kajian menunjukkan bahawa penggunaan baja bio membantu dalam pertumbuhan tumbuhan dan pemuliharaan tanah lestari secara keseluruhan.

RM 420 juta

…kurangkan penggunaan baja berasaskan nitrogen

16 WORLD BUSINESS

FRIDAY SEPTEMBER 15, 2017 • THEEDGE FINANCIAL DAILY FD

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 nitrogen-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 microorganisms to help plants and the soil assimilate nitrogen molecules from the air or other sources, Gingko 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 nitrogen 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

Teknologi IBG

Melalui teknologi, kami menyediakan:

Penyelesaian inovatif melalui bioteknologi

Model komprehensif dari gabungan mikrob, organik, kimia dan unsur surih

Pelbagai faedah

KELEBIHAN UNIK

1. Meningkatkan penggunaan bahan organik tanah, dengan itu mengurangkan hakisan tanah
2. Menambah baik pengangkutan nutrien melalui rembesan semulajadi akar elemen faktor pertumbuhan oleh mikrob
3. Mengurangkan kerugian yang disebabkan oleh hujan melalui bakteria Fosforus dan Kalium
4. Meningkatkan pertumbuhan tanaman
5. Meningkatkan kadar pembunggan dan nisbah bunga betina
6. Meningkatkan berat buah dan kualiti
7. Membekalkan baja nitrogen yang tidak berasid

Semua kesan di atas boleh dilihat dalam tempoh tiga tahun selepas aplikasi

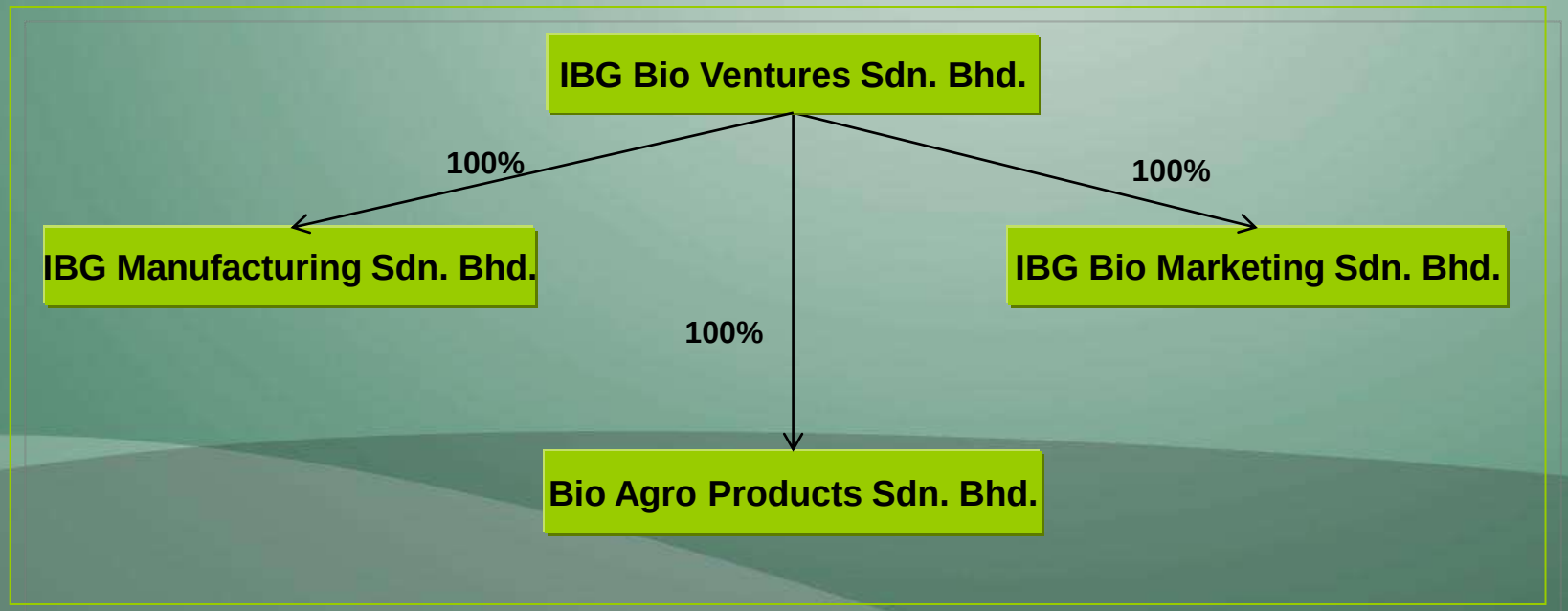
IBG Manufacturing Sdn. Bhd.

IBG Manufacturing Sdn. Bhd.

IBG Manufacturing Sdn. Bhd. mempunyai kilang sendiri di Malaysia sejak 1998. Ia diperbadankan pada bulan Julai 2004, di bawah IBG Bio Ventures Sdn. Bhd. Modal berbayar IBG Manufacturing adalah RM 2 juta.

Falsafah kami :

"Innovative Biotechnology for Green world will ultimately benefit to our human kind "



AWARDS & CERTIFICATIONS

CI•TEX
International Invention, Innovation, Industrial Design & Technology Exhibition
[formerly known as MINDEX / INNOTEX]

Certificate of Award

This is to certify that a

GOLD

Medal has been awarded to
YEAT SEW CHUONG OF

for the invention

MULTI - PURPOSE LIQUID FERTILIZER

in the

Invention and Design Competition

Held on 23rd – 26th SEPTEMBER 1999

Minister of Science, Technology and the Environment | President, Malaysian Invention and Design Society | President & Chief Executive, SIRIM Berhad

Anugerah pingat emas dalam ITEX99' (Malaysia International Invention, Innovation & Industrial Design 1999) untuk ciptaan baja bio**.**

Perbadanan Harta Intelek Malaysia
Intellectual Property Corporation of Malaysia
(Diperbadankan)

MyIPO

CERTIFICATE OF FILING

APPLICANT	:	DATUK YEAT SEW CHUONG
APPLICATION NO	:	PI 20062236
REQUEST RECEIVED ON	:	15/05/2006
FILING DATE	:	15/05/2006
AGENT'S/APPLICANT'S FILE REF.	:	SD/PAT 2921278/ZRS/SDM/SR

Please find attached, a copy of the Request Form relating to the above application, with the filing date and application number marked thereon in accordance with Regulation 25(1).

Date : 23/05/2006

(NOOR MOHAMAD HAZMAN B. HAMID)
For Registrar of Patents

To : ZARAIHAN BT. SHAARI,
C/O SHEARN DELAMORE & CO.,
7th FLOOR, WISMA HAMZAH-KWONG HING,
NO. 1, LEBOH AMPANG,
50100 KUALA LUMPUR,
MALAYSIA.

RECEIVED
25 MAY 2006

FF 09

Baja bio inokulan yang pertama yang mempunyai paten di Malaysia ***PI20062236***

DIPLÔME

27E SALON INTERNATIONAL DES INVENTIONS

GENÈVE 1999

Après examen, le jury International a décidé
de remettre à: INS ENTERPRISE SDN BHD
pour l'invention: INS CALIBRE

UNE MEDAILLE D'ARGENT

Genève, le 3 mai 1999

Le Rapporteur du Jury | Le Président du Comité d'Organisation du Salon

Anugerah pingat perak dalam 27th Geneva International Exhibition of Agricultural Invention & New Techniques 1999.

AWARDS & CERTIFICATIONS

Our reference: CSSD/BNX-100437/LOA/sz

14 January 2009

Mr. Yeat Siaw Ping
Chief Executive Officer
IBG Manufacturing Sdn Bhd
No. 3, Jalan TPK 1/3
Taman Perindustrian Kinrara
47100 Puchong
Selangor

Tel: 03-80704797
Fax: 03-80704161

Dear Mr. Yeat,

LETTER OF AWARD OF BIONEXUS STATUS AND TAX INCENTIVE TO IBG MANUFACTURING SDN BHD (473365-H) ("the Company")
BioNexus Ref. No. : BNX-100437

We refer to the following documentation submitted by the Company to our Client Support Services Division:

(a) the completed BioNexus Status application form dated 24 March 2008 applying for BioNexus Status;
(b) the final business plan, financial projections and relevant documents; and
(c) all agreed variations or modifications to the above mentioned documents in paragraph (b) above pursuant to letter/ meetings (if any),

collectively to be referred to as the "Application Documents".

We are pleased to inform you that the Minister of Finance, in concurrence with the recommendation made by Malaysian Biotechnology Corporation Sdn Bhd, has APPROVED your Company's application for the BioNexus Status and 100% tax exemption of the statutory income for a period of ten (10) years under Income Tax (Exemption) (No. 17) Order 2007 [P.U. (A) 371/2007] on 27 March 2008 ("Effective Date"). Kindly take note that the Company has been conferred the BioNexus Status and tax exemption subject to its acceptance of such status and full compliance with the attached Terms and Conditions:

a) **Qualifying Activities.**
The Company must conduct only the following Qualifying Activities:
Research, development and production of bio-fertilizers.

b) **Location of Operations.**
The Company must conduct the Qualifying Activities at the following location:
No. 3, Jalan TPK 1/3
Taman Perindustrian Kinrara
47100 Puchong
Selangor
Malaysia

MALAYSIAN BIOTECHNOLOGY CORPORATION SDN BHD

BIONEXUS – Diperolehi daripada **Malaysian Biotech Corporation** – IBG disahkan sebagai pemain industri dalam zon tumpuan bioteknologi negara. **Berhak menikmati 10 tahun pengecualian cukai 100%.**

Pingat perak dalam Bio Technology Asia 2006 (3rd International Biotechnology Trade Exhibition, Conference & Awards)

ISO 9001 UKAS SGS; ISO 17025 makmal bertauliah (Untuk makmal Kimia dan Mikrobiologi).

ANUGERAH & PENSIJILAN

2011 International Standard Quality Award untuk **kualiti produk**

企业白金奖
PLATINUM
BUSINESS AWARD 2016

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

星洲企業楷模獎
Sin Chew Business Excellence Awards 2016
Innovation · Transformation · Sustainability

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)

Pembuatan dan fermentor - disahkan dengan ISO 9001

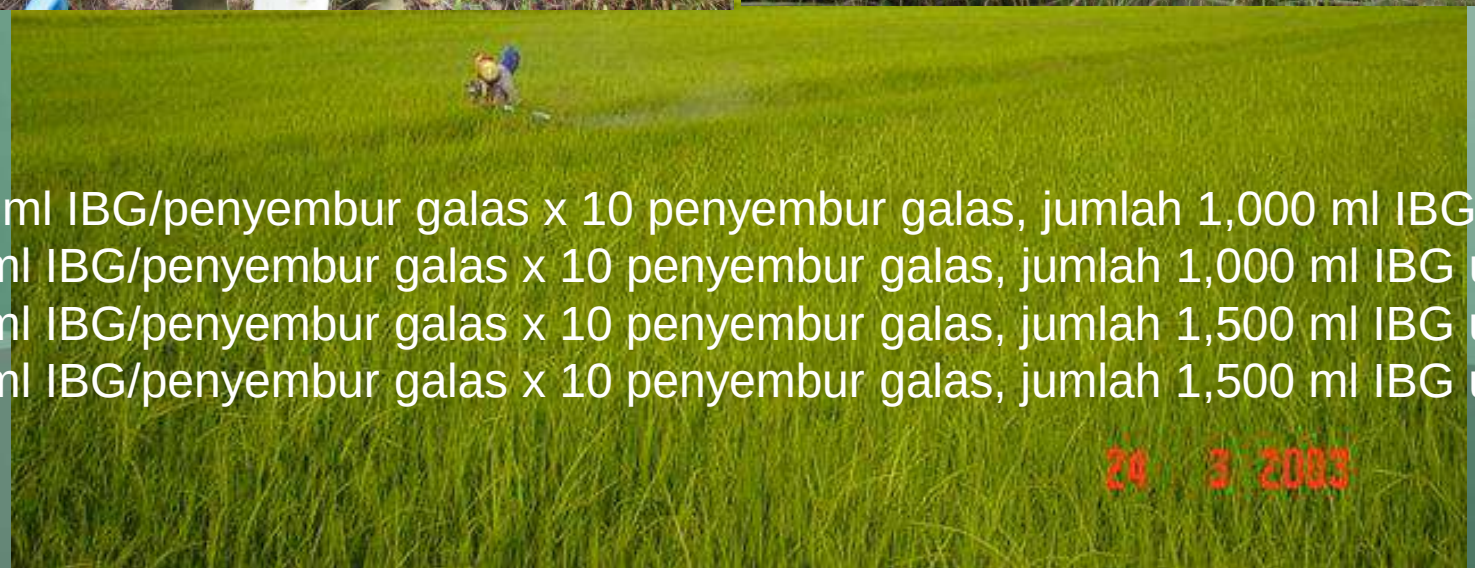
Makmal – diakreditasikan dengan ISO/IEC 17025

PENYELIDIKAN DAN PEMBANGUNAN

IBG Manufacturing Sdn Bhd telah membina pusat R & D yang berteknologi tinggi untuk menyokong inisiatif R & D yang kukuh. Pusat R & D memberi tumpuan kepada teknologi terkini, daripada penyelidikan meluas kepada pembangunan produk bertaraf dunia baja bio dengan hak harta intelek milik sendiri dan potensi pemasaran yang hebat.

Kami telah menubuhkan bidang eksperimen dan kerjasama dengan institusi penyelidikan yang terkenal di Malaysia dan China sebagai usaha untuk memastikan kenaikan taraf dan inovasi produk yang berterusan.

Kaedah penyemburan untuk Padi



Hari (-)7: 100 ml IBG/penyembur galas x 10 penyembur galas, jumlah 1,000 ml IBG untuk 1 ha
Hari 25: 100 ml IBG/penyembur galas x 10 penyembur galas, jumlah 1,000 ml IBG untuk 1 ha
Hari 50: 150 ml IBG/penyembur galas x 10 penyembur galas, jumlah 1,500 ml IBG untuk 1 ha
Hari 75: 150 ml IBG/penyembur galas x 10 penyembur galas, jumlah 1,500 ml IBG untuk 1 ha

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

Meningkatkan berat 1000 biji.
Increase weight of 1000 grain

2

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

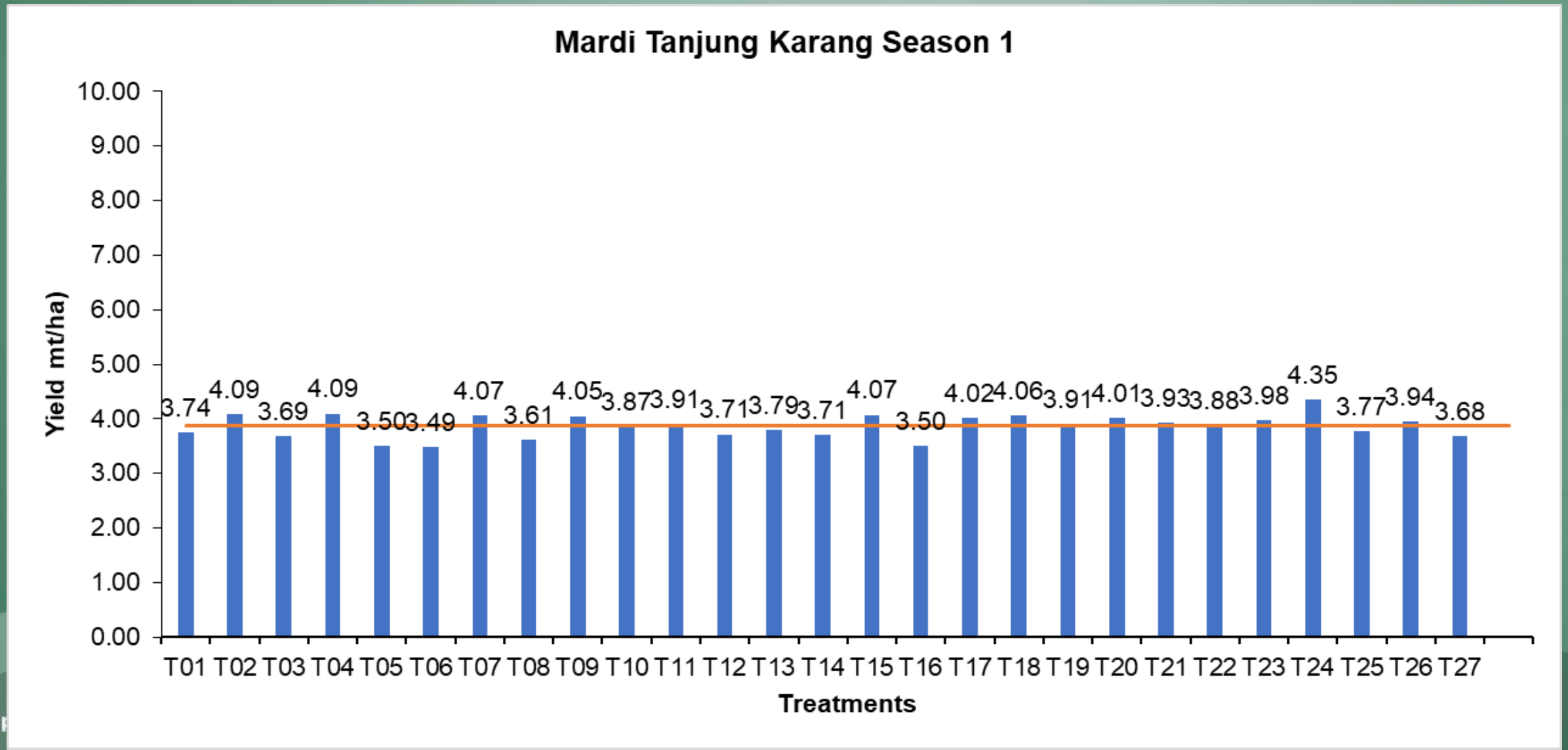
CONFIDENTIAL

FINAL REPORT ON

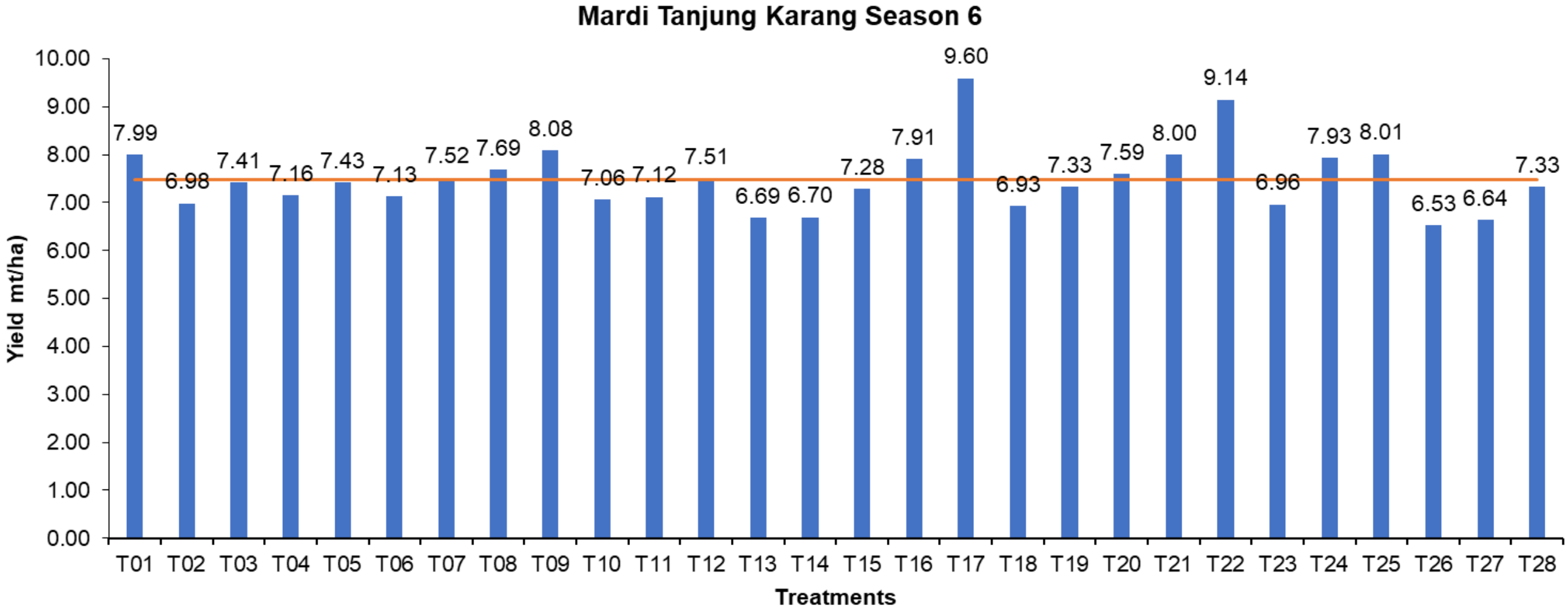
DEVELOPMENT OF IBG MULTIPURPOSE BIO FERTILIZER FOR RICE CULTIVATION

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

Kesan baja bio IBG Multipurpose kepada hasil



Kesan baja bio IBG Multipurpose kepada hasil



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 Tanjong 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 -8066 2875 Fax: 603 -80521903 E-mail:info@ibgv.com.my

Sebelum

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 1766.1.3, 1991	cfu/g	4.4×10^5

4.4×10^5 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.
The report shall not be reproduced except in full, without the written approval of the laboratory.

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

ISO/IEC 17025

IBG MANUFACTURING SDN. BHD. (473365-H)
GST No: 001336541184
No. 3, Jalan TPP 3, Taman Perindustrian Putra, 47130 Puchong, Selangor Darul Ehsan.
Tel: 603 -8066 2875 Fax: 603 -80521903 E-mail:info@ibgv.com.my

Selepas

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 1766.1.3, 1991	cfu/g	3.8×10^6

3.8×10^6 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

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ISO/IEC 17025

APPLIED AGRICULTURAL RESOURCES SDN. BHD.

(No. Syarikat : 90455-D)

Soil Analysis Results

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

Date Sampled : 30/07/2020
Date Received : 04/08/2020
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/BG 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

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			5.86	2.85	0.76	3.8	3035	359.5	17.02	10.51	16.06	3.19	20.1	4.28						

Date : 01/10/20

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

****

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.

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-H)

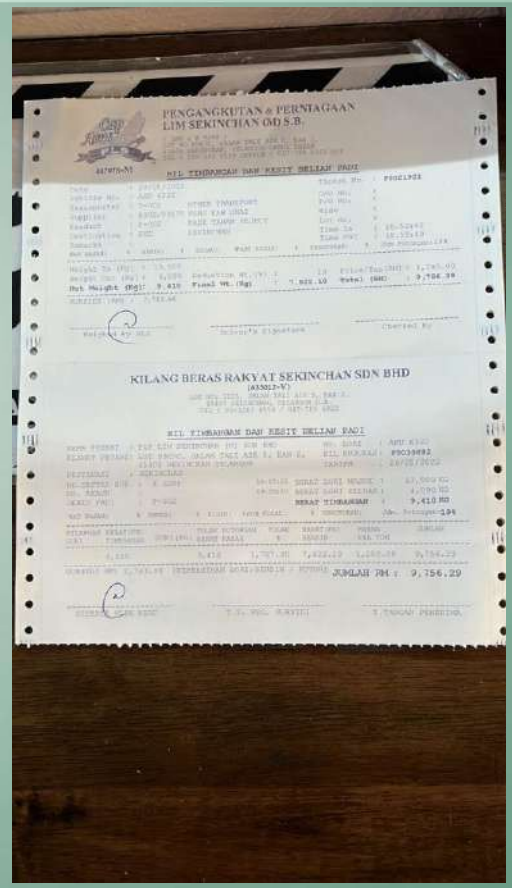
.....
DATO' YEAT SIAW PING
NRIC No: 630702-08-6037
Designation: Group CEO

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

Mardi Tanjung Karang

Mardi Seberang Perai

Kilang Beras Rakyat Sekinchan Sdn. Bhd.



Mei, 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

Keputusan penyelidikan di Karangmalang dan Kemuten, Kabupaten Brebes, Indonesia

(oleh: **DINAS PERTANIAN KEHUTANAN DAN KONSERVASI TANAH, 2001)**

Singkatan	Tindakbalas	Baja	Karangmalang	Kemuten
P0	100% baja kimia	300kg urea/ha 100kg ZA/ha 100kg SP–36/ha 100kg KCl/ha	4.28 mt/ha	6.06 mt/ha
P1	50% baja kimia 50% baja bio IBG	150kg urea/ha 50kg ZA/ha 50kg SP–36/ha 50kg KCl/ha 2 liter baja bio IBG/ha	4.21 mt/ha	7.10 mt/ha
P2	75% of baja kimia 75% of baja bio IBG	225kg urea/ha 75kg ZA/ha 75kg SP–36/ha 75kg KCL/ha 3 liter baja bio IBG/ha	5.56 mt/ha	6.77 mt/ha
P3	**100% of baja bio IBG**	**4 liter baja bio IBG/ha**	**6.20 mt/ha**	**7.73mt/ha**
Pengeluaran di luar plot eksperimen			4.16 mt/ha	7.33mt/ha

(Jarak: 2.5 x 2.5 cm)

Keputusan penyelidikan di Desa Jatipancur oleh PKPP

Tindakbalas	Kadar	Lokasi	Hasil/ha
100% baja bio IBG	3.5 liter/ha	Sukarma, Saluyu plantation	11.01 mt/ha
Baja bio IBG + baja kimia	2 liter/ha 75 kg Urea 50 kg TCP – 36	Ado Suganda, Sukamulya plantation Astami, Siundak plantation	8.40 mt/ha 8.00 mt/ha

Testimoni Filipina

Baja yang digunakan: 3 liter baja bio IBG + 3 Beg 17-0-17 + 1 Beg 21-0-0

Varieti: Rice M-3 (Hi-Breed) tahun 2008

Keputusan: 8,710 kg/ha

Pemilik: Vilma Garzon, Kabacan, North Cotabato

Baja yang digunakan: 2 liter baja bio IBG + baja kimia

Varieti: Rice M-3 (Hi-Breed)

Keputusan: 8.70 mt/ha

Pemilik: Vilma Garzon, Kabacan, North Cotabato

Testimoni Filipina

Baja yang digunakan: 3 liter baja bio IBG + 2 Beg Urea (46-0-0)

Varieti: Rice M-11 tahun 2008

Keputusan: 10,218.90 kg/ha

Planting Time: November 2008 *(Musim hujan)*

Pemilik: Vilma Garzon, Kabacan, North Cotabato

Baja yang digunakan: 1 liters baja bio IBG + 1 Beg Urea (46-0-0) + 2 Beg 14-14-14

Varieti: Rice M-7 (HI BREED)

Remarks: dengan baja kimia - hasil 3.35 mt/ha; dengan IBG - hasil 7.04 mt/ha

Pemilik: Manuel Quilantang, Ormoc City

Testimoni Kambodia

Testimoni Kambodia

Analisis kos

Hari lepas tanam	Baja bio IBG (RM 345/4L)	Kos/ha
(-) 7 hari	IBG 100 ml/pg* x 10 penyembur galas/ha	RM 86.25
25 hari	IBG 100 ml/pg* x 10 penyembur galas/ha	RM 86.25
50 hari	IBG 150 ml/pg* x 10 penyembur galas/ha	RM 129.38
75 hari	IBG 150 ml/pg* x 10 penyembur galas/ha	RM 129.38
	Jumlah kos/ha	RM 431.25

* Untuk padi 120 hari matang; Untuk padi 90 hari matang, baja bio IBG diletakkan pada hari 15, 35, 55 HLT.

Baja kimia digunakan mengikut keputusan ladang.

Terima kasih

IBG Manufacturing Sdn. Bhd.

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

Tel No.: 603 – 8066 2875

Fax No.: 603 – 8052 1303

Koordinat: N 2.971074, E 101.575499 (N 2˚58’15.8664”, E 101˚34’31.7958”

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