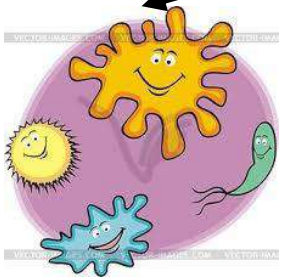
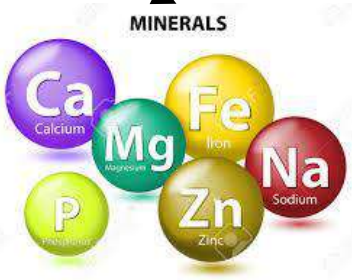

IBG
(649448-K)
IBG 生物肥料系列
通过创新生物技术发展可持续农业

天然的土壤有些什么





益菌　　真菌，放线菌，小昆虫　　有机质　　巨量与微量化学元素　　水分

天然的土壤有些什么

1. 细菌
   - 分解有机质
   - 循环养分
   - 制造腐植土
   - 固氮
   - 促进植物的生长

2. 有机质
   - 成为植物的营养库存
   - 给予细菌食物

- 回复土壤的养分

天然的土壤有些什么

3. 巨量和微量元素

- 碳、氢，氧
- 氮
- 磷
- 钾
- 钙
- 镁
- 硫
- 锰
- 铜
- 锌
- 钼
- 鹏
- 氯
- 铁

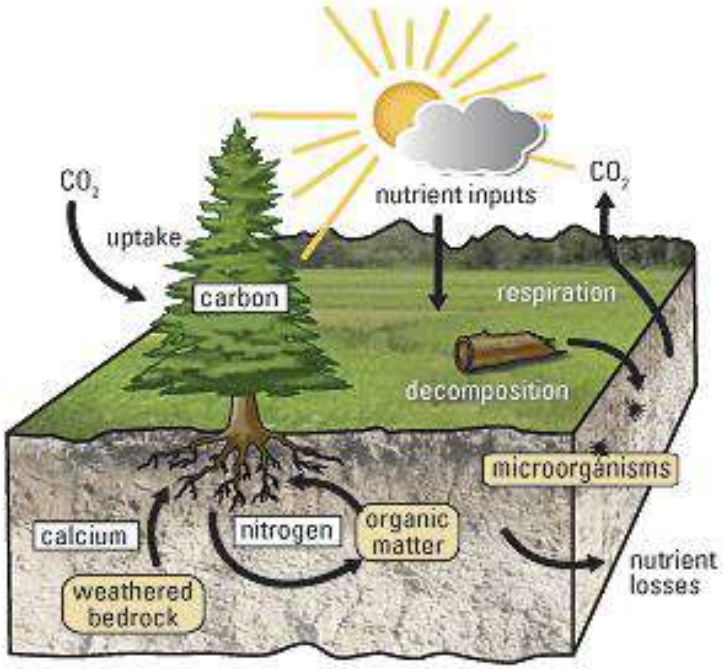
让植物健康生长，形成食物和对抗疾病等

为什么保护土壤那么重要

- 土壤 – 为植物提供水分，营养，空气和保护。
- 植物 – 为人类提供食物和保护。
- 人类 – 但人类却大量使用化肥而破坏土地

- 当土壤因酸性受损时，土壤的免疫系统会降低。不健康的土壤不会产生良好的植物。植物的病症也是变得严重。因此植物不会对人类产生优质的食物。 所以，保护土壤，保障人类健康是重要的。

原始森林阶段


CO_2
uptake
carbon
nutrient inputs
CO_2
respiration
decomposition
microorganisms
calcium
weathered bedrock
nitrogen
organic matter
nutrient losses

农根地开发阶段

化学肥料的重要性

- 土壤含有营养素的天然储备，但这些营养素很多是植物无法获得的形式。
- 这些营养通过天然的分解仅施放少部分，而且这个释放过程太慢，无法补偿农业生产中所需要的营养物质并满足农作物的需求。
- 植物生长需要至少16种营养元素，所以每次被农作物带走的元素是非常多的，被带走多少，就要补充多少，这是对土地的公平交易。
- 因此，为了补充土壤营养的不足，化学肥料被推荐使用以增加产量，进而增加农民盈利。

化学肥料的好处与坏处

早期使用

好处

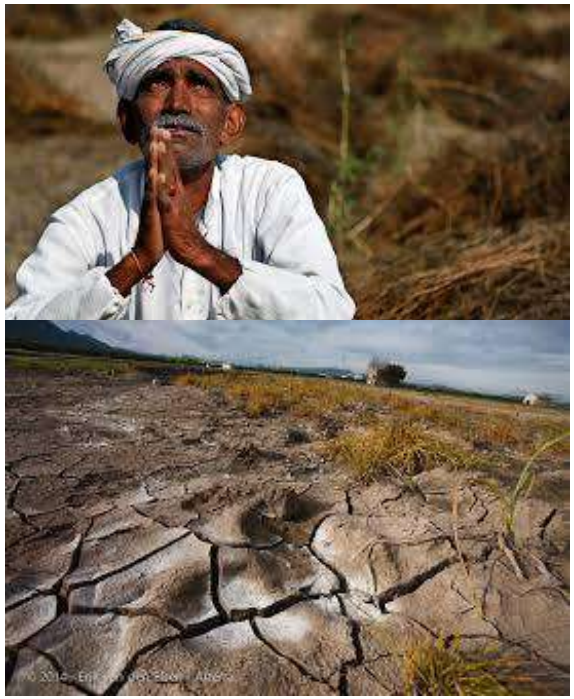
- 农作物生长快速而且肥大。
- 营养丰富。
- 支撑植物的生长。
- 提高产量。

化学肥料的好处与坏处

长期使用

<u>坏处</u>

- 植物毒性和污染。
- 导致土壤枯竭，并导致土壤变酸。
- 干扰自然土壤生态学，破坏土壤结构。



破坏的土壤与健康的土壤

肥料的种类

化学肥料

西药

效果快速，但有很多坏处。

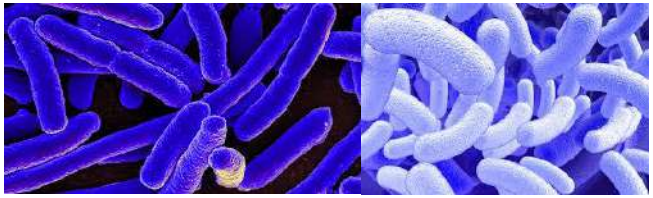
- 长期使用化学肥料 = 长期服用西药 = 虽然快速和有效但有很多副作用。

肥料的种类

有机肥料

中药/传统药方

效果慢，但没有副作用。



细菌/微生物

保健品

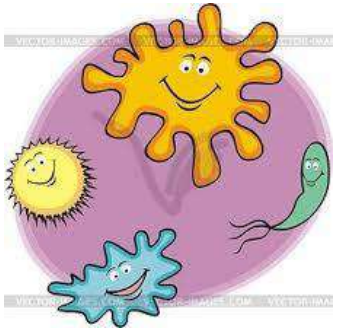
相对的安全和可靠，长期使用能够修复和保育土壤。

什么是IBG生物肥料

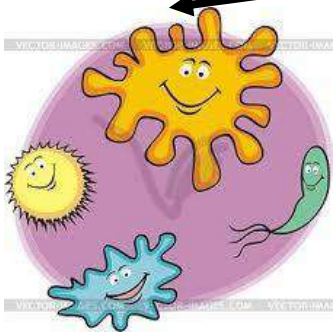
土壤保健最佳的组合

有机质

细菌/微生物



IBG生物肥料里面有什么



1克有超过1千万的有益微生物

芦荟、海藻、腐殖酸、氨基酸、鱼精

- 生物肥料里面的含菌量每克一定要超过千万单位才能称之为生物肥料。我们的产品每克的含菌量已经达到亿单位。

- 再者，生物肥料如果只有良菌的存在，良菌在没有有机质的情况下，也不能存活很久，良菌必须要在有机质和微巨量元素的配合下，才能达到回复土壤的效果。

- 这两个的组合就是土壤里面原本拥有的东西。IBG生物肥料能够提供完整的元素供植物生长，让植物吸收的更好。

总细菌计数: 10^7 cfu/克

TEST REPORT

Lab Number : IBG-QC-254/16
Date received : 11th Oct 2016
Date tested : 11th -13th Oct 2016
Date reported : 14th Oct 2016

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

Sample description : One sample of Liquid Biofertilizer,
Sample marking : OP 11/10/16 MAS-F002-1610-04

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	6.35×10^7
pH @ 28.6-29.1°C	In House Method, TM-IBG-02-004, based on pH meter	-	4.28
Nitrogen (as N)	In House Method, TM-IBG-02-011, based on Determination of Nitrogen Content in Fertilizers Containing Nitrate, Bioch Nitrogen Information No. 7, 1994	% w/w	7.36
Phosphorus (as P_2O_5)	MS 417: Part 4: 1994	% w/w	8.79
Potassium (as K_2O)	In House Method, TM-IBG-02-007, based on AOAC 978.02:2006 Milestone Application Note DG-FO-54	% w/w	9.85
Boron, acid soluble (as B_2O_3)	AOAC 982.01, 2005	% w/w	0.97
Magnesium (as MgO)	In House Method, TM-IBG-02-008, based on AOAC 985.09 2005 & Milestone Application Note DG-FO-54	% w/w	0.92

Dr. LINDA KE YAN YIAN
Chief Technical Officer
BSc (Hons), MSc, PhD, FMIC
(KM No.: F/0100/1958/89/02/13)

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.

TEST REPORT

Lab Number : IBG-QC-256/16
Date received : 25th Oct 2016
Date tested : 25th Oct – 7th Nov 2016
Date reported : 8th Nov 2016

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

Sample description : One sample of Liquid Biofertilizer,
Sample marking : OP 25/10/16 MAS-F002-1610-09

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	9.60×10^7
pH @ 24.2°C	In House Method, TM-IBG-02-004, based on pH meter	-	4.03
Nitrogen (as N)	In House Method, TM-IBG-02-011, based on Determination of Nitrogen Content in Fertilizers Containing Nitrate, Bioch Nitrogen Information No. 7, 1994	% w/w	7.21
Phosphorus (as P_2O_5)	MS 417: Part 4: 1994	% w/w	9.05
Potassium (as K_2O)	In House Method, TM-IBG-02-007, based on AOAC 978.02:2006 Milestone Application Note DG-FO-54	% w/w	9.55
Boron, acid soluble (as B_2O_3)	AOAC 982.01, 2005	% w/w	1.01
Magnesium (as MgO)	In House Method, TM-IBG-02-008, based on AOAC 985.09 2005 & Milestone Application Note DG-FO-54	% w/w	0.93

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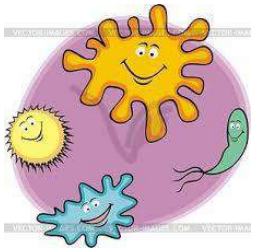
IBG生物肥料内含



有益微生物 - 改善吸收和分解有机物质，一克有超过1亿的有益微生物。

芦荟、海藻、腐殖酸、氨基酸、鱼精 - 改善土壤有机质含量。

IBG生物肥料的施放

分量

请注意，IBG生物肥料替代了化学肥料的20 – 30%。 因此，使用IBG生物肥料后，您的材料成本不会改变。

70 – 80%	20 – 30%
化学肥料	IBG生物肥料

为何选择IBG生物肥料

- 提高植物的生产效率。
- 提供了一种经济可行的支援。
- 土壤健康保护。
- 有效地帮助植物吸收养分。
- 减少化肥的用量。
- 降低植物的根的疾病。
- 节省储存室的空间。

一个健康的人不太可能患上任何疾病。

一个健康的植物将不太可能得到任何疾病。

土壤用IBG生物肥料处理后，微生物可以帮助有机物分解和土壤矿化。 在分解过程中释放氮和磷，从而可以减少氮肥和磷肥。

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. Pa
[4]V.V.P. Engin
[5]Sindhu Maha
[6]Dr. D.Y. Pat

Original scientific paper

The possible role of bio-fertilizers in agriculture

[illegible]mara Marozsán[1], Szilvia Veres[2], Éva Gajdos[3], Nóra

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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 sim
(Schultz et al., 1995; Socolow, 19
Environmental poll
be either direct or indi
aged use of fertilizers
and denitrification. Ind
Bosch process) and tran
in airborne CO_2 and N pollution, which will be eventually deposited into 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

CHILEANJAR

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

Arshad Javaid[1]*

International Journal of Agriculture: Research and Review. Vol., 2 (6), 699-704, 2012
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ECISI

BIOFERTILIZER AFFECTS YIELD AND YIELD COMPONENTS OF WHEAT

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

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

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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 (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 (Azty 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 [illegible]

[illegible] 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.

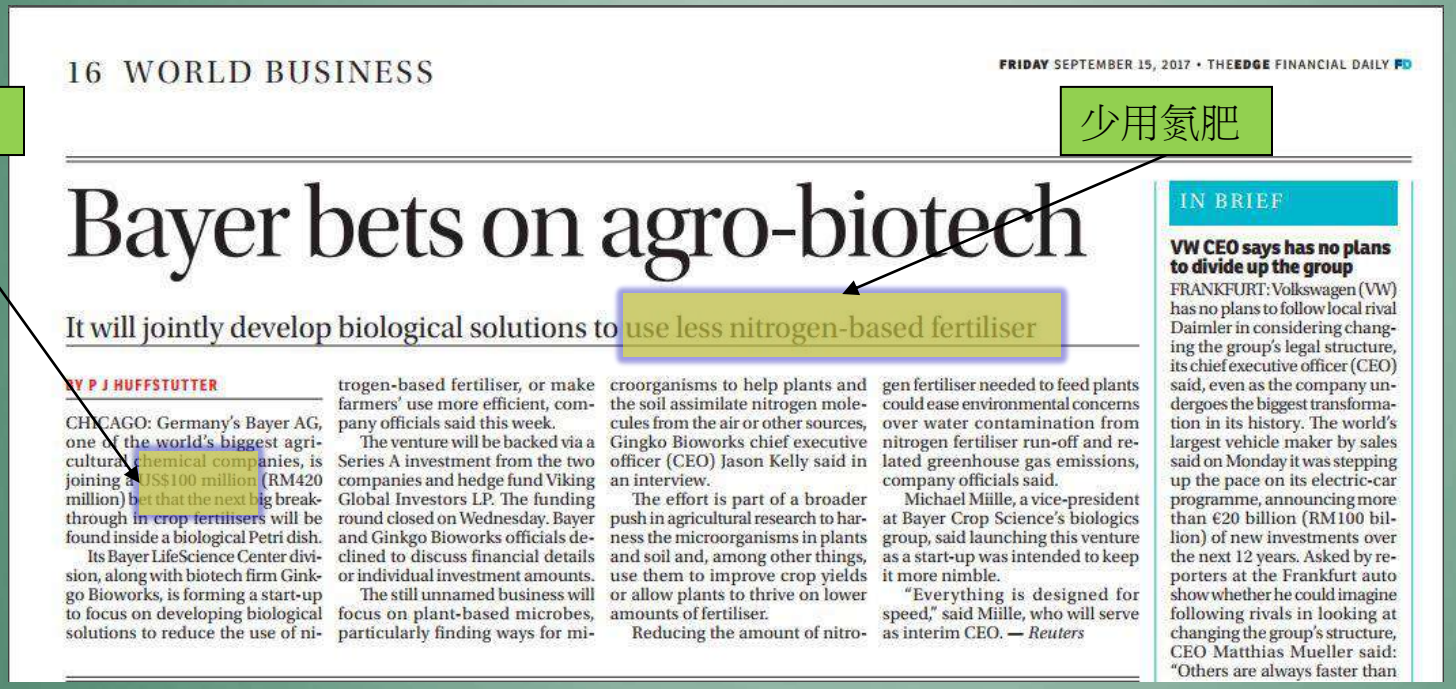
While utilize Bio-fertilizers importing a large population of effective microorganisms in the active field of root [illegible]

[illegible]eloped countries and developing countries especially in are carried out with different motivations. The purpose encourage developed countries to produce of such fertilizers is due to serious environmental consequences by uncontrolled and unbalanced use of chemical fertilizers. During the period of transition from conventional agriculture to sustainable agriculture, combination of chemical fertilizers and Bio-fertilizers, especially organic fertilizers

许多研究表明，生物肥料的使用确实有助于植物生长和可持续的土壤保养

马币 4.2 亿

少用氮肥



16 WORLD BUSINESS

FRIDAY SEPTEMBER 15, 2017 • THEEDGE FINANCIAL DAILY

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

IBG 的科技

通过技术，我们提供：

•通过生物技术创新的解决方案

•微生物，有机，化学和微量元素的组合的综合模型

•各种好处

独特优势

1.提高土壤有机质的利用率，从而减少水土流失

2. 微生物以根部天然分泌的生长因子元素，提高营养成分运输

3. 通过磷，钾释放细菌，减少损失

4. 提高植物生长

5. 增加结花率和比例

6. 增加果实的重量和品质

7. 提供非酸性氮肥

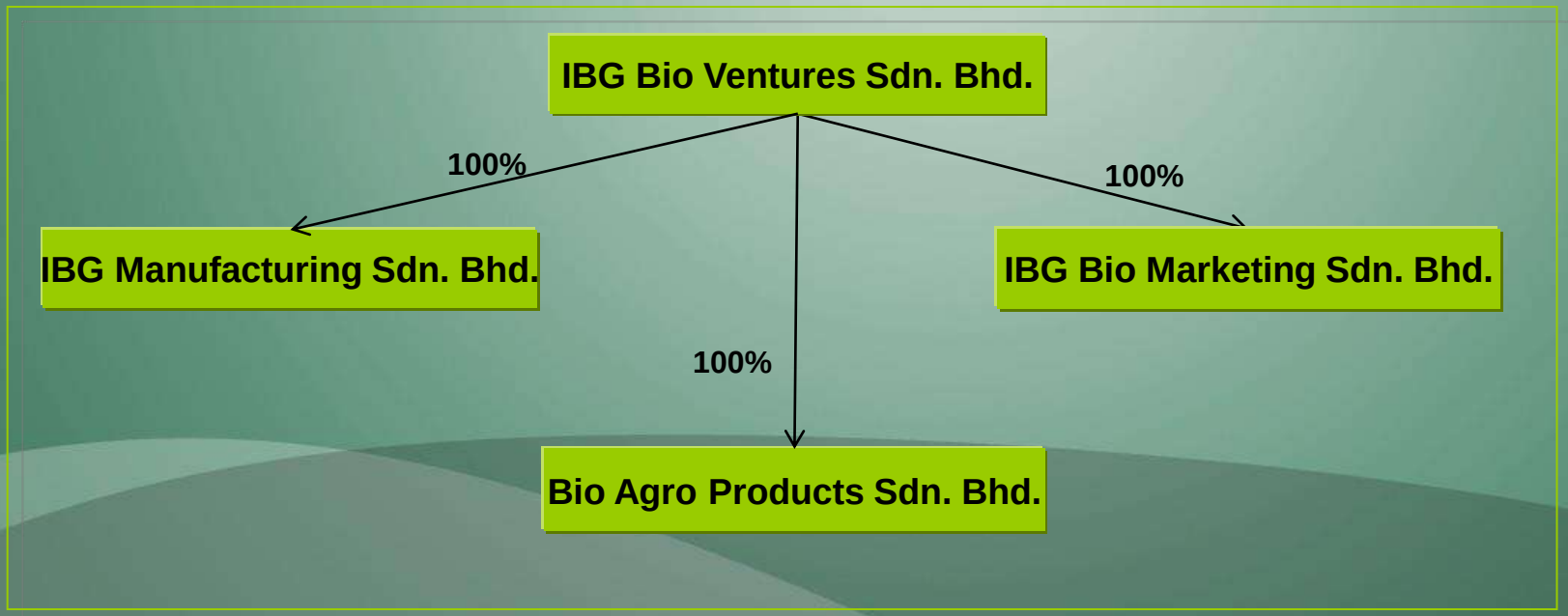
IBG Manufacturing Sdn. Bhd.

关于 IBG Manufacturing Sdn. Bhd.

IBG Manufacturing Sdn. Bhd.自1998年起在马来西亚设立工厂。该公司于2004年7月隶属于IBG Bio Ventures Sdn. Bhd. IBG Manufacturing缴足资本为200万令吉。

我们的哲学:

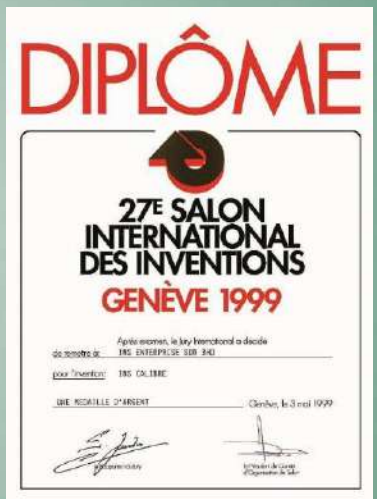
“绿色世界的创新生物技术将最终对我们的人类有益”



奖项和认证

1999年《马来西亚ITEX国际发明展》发明与设计比赛金奖

第一个生物肥料在马来西亚申请专利PI20062236



《1999年日内瓦国际发明奖》银奖

奖项和认证

生物科技核心业务地位 – 从大马生物科技机构取得 – IBG被认证为国家生物技术重点领域的行业参与者。*享有10年100％的免税优惠。*

《2006年亚洲生物科技奖》银奖

ISO 9001 认证; ISO 17025 认证实验室（化学和微生物实验室）。

AWARDS & CERTIFICATIONS

2011 国际标准品质奖

企业白金奖
PLATINUM
BUSINESS AWARD 2016

2016 杰出成就奖 – 马来西亚中小型企业工会

2016 产品与卓越服务奖

2018 肥料产品品质杰出大奖 – 第四届大马神农楷模奖

2018 创业楷模既相扶奖

2020 菲律宾**Halal** 认证

制造与发酵槽 – ISO 9001认证

实验室 – ISO/IEC 17025认证

研究与开发

IBG Manufacturing Sdn Bhd 建立了最高科技研发中心，以支持其强大的研发计划。研发中心致力于尖端技术，从广泛的研究到开发具有自主知识产权和巨大营销潜力的世界级生物肥料产品。

我们已经建立了实验领域，以确保持续的产品升级和创新。

IBG 多用途生物肥料卓越的施放效果

龙珠果

玉蜀黍

黄瓜 & 长豆 & 苦瓜

芥兰 & 白菜

红毛丹 & 可可

番石榴 & 柚子

西瓜 & 蜜瓜

香蕉

榴莲 & 芒果

烟草 & 胡椒

木瓜 & 黄梨

甘蔗 & 橡胶

芦菇 & 兰撒 & 芦菇兰撒

木薯 & 荔枝

花类

非凡效果 - 榴莲

- 增加开花和果实的形成速率为25％，降低未成熟果实为50％。
- 可以在收获时用来缩短榴莲休眠和滞后的时间。
- 在9-14个月施放后去除80%攀援植物。

非凡效果 - 榴莲

- 受感染的黑点会在施放后4-6周可缓解，6个月内恢复。

Radiance Forest Sdn. Bhd.
IBG 使用日期: 2019年4月24日

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IBG 使用日期: 2019年4月24日

Broga Orchard Hill
IBG 使用日期: 2019年11月26日

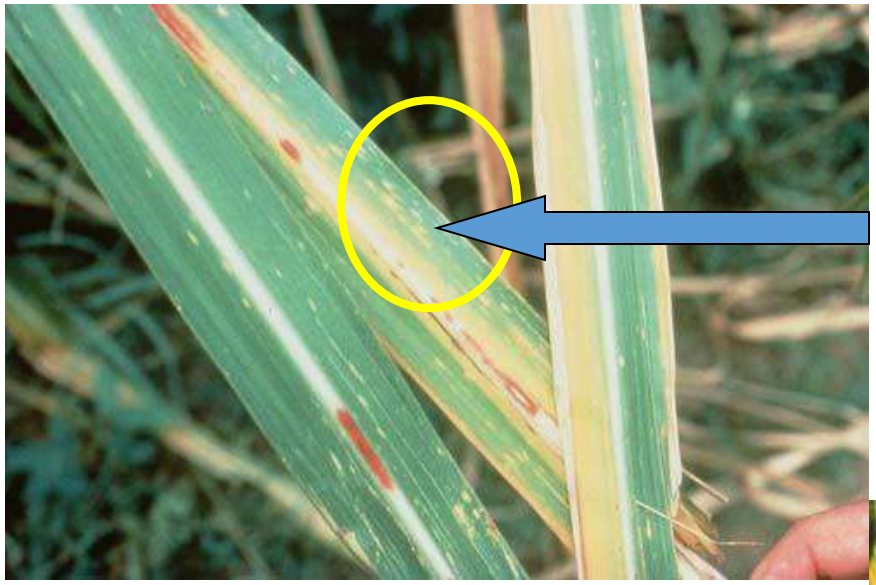
非凡效果 - 芒果

- 消除和减少果实开裂，和树叶变黄。
- 增加A级水果，更好吃，美味和更大的果实。
- 开花和果实形成连续的阶段性产生。

非凡效果 – 甘蔗 *(Saccharum officinarum L.)*

- 增加甘蔗的长度，茎围更厚。
- 增加甜味水平。

甘蔗的效果



钾的高度运用会导致钾的不足，使到生长受阻，茎围纤细，和橙色或红棕色脱色/坏死的老叶。

乳杆菌能够分泌有机酸以溶解非水溶性钾成可溶形式，以改善甘蔗对钾的摄取。

非凡效果 - 橡胶

- 树皮变得更柔软，更容易被切割。
- 乳胶浓度增加。
- 在挖树皮施用，提高新陈代谢，新的树皮再现。

非凡效果 - 橡胶

- 6个月施放后，它可以从黑皮症恢复并重新开始生产胶乳。
- 增加植物抵抗疾病的免疫力。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非凡效果－玉蜀黍

- 增强根系发育。
- 增加的根的吸收率。
- 增加的A级玉米的数量。
- 丰满的谷粒和内核。

非凡效果 – 水翁 / 番石榴 / 柚子

- 开花和果实形成连续的阶段性产生。
- 增加A级水果。
- 果实更有光泽。

非凡效果 – 兰撒 / 芦菇 / 芦菇兰撒

- 更长和更密集的果串（> 35％）。
- 防止和消除树皮上的痂。
- 消除疤痕后增加开花和果实形成率。

非凡效果 –
长豆, 法国豆, 黄瓜, 苦瓜

- 更长的收获期。
- 均匀和饱满的形状的水果。
- 丰满和漂亮的光泽。
- 减少水果裂纹。

非凡效果 – 龙珠果

- 加速生根和新芽的发芽。
- 防止茎腐烂。

使用IBG的切片显示更大的根生长。

对照组的切片显示出更慢的根部建立

非凡效果：烟草 *(Nicotiana tabacum L.)*

- 收获更大和更重的叶子

使用IBG生物肥料之前

使用IBG生物肥料之后

收获更宽的和更重的叶子，转化为更大的收入。

非凡效果 – 胡椒

- 预防根腐病的攻击。
- 更丰满的颗粒。
- 更长的串粒。

非凡效果 – 红毛丹 / Pulasan

- 更甜和丰满的果实
- 减少空无和扁平的果实。
- 更强的树枝.

非凡效果 – 可可

- 更高的开花期和果实形成率。
- 更高的产量。
- 更大的可可豆荚。
- 可可豆的质量和数量更高。

非凡效果 – 荔枝

- 更高的开花期和果实形成率。
- 更高的质量和数量的串。

非凡效果 – 木薯

在Ayer Hitam，柔佛的木薯园丘 (270天的树)

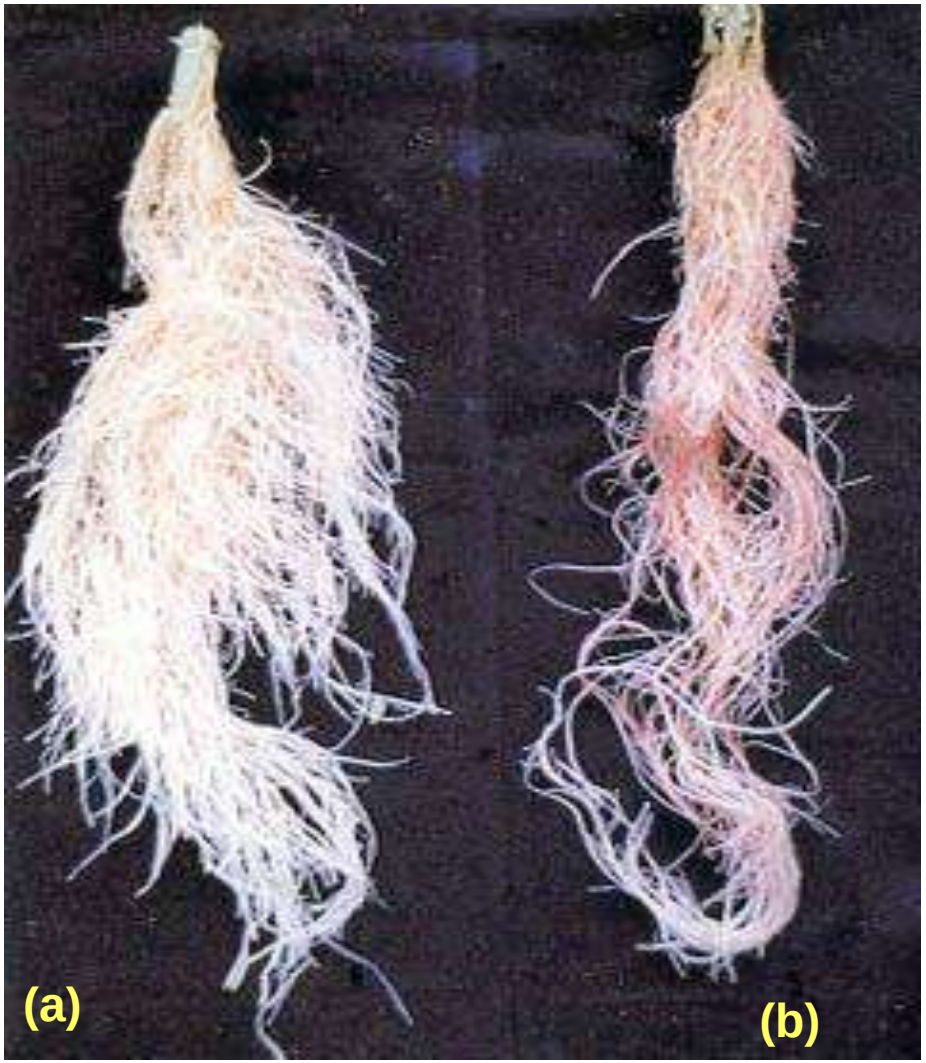
在Ayer Hitam，柔佛的木薯园丘 (270天的树)

从270天的树中提取的木薯根之一称，重量超过20kg（> 4英尺长; 最重，28kg）

非凡效果 – 木瓜 (*Carica sapientum* L.)

- 有助于提高根的发展，
- 通过从微生物分泌天然调节生长激素例如生长素和赤霉酸来缩短发芽时期。

非凡效果 – 木瓜 (*Carica sapientum* L.)



图标 (a) 使用IBG生物肥料的木瓜表现出更高的根生长速率。根发生白色，活力，更强，并且没有磷缺乏的迹象。 然而，

(b) 没有使用IBG的木瓜表现出较少的活力和萎缩，并患有磷的缺乏。

非凡效果 – 黄梨

- 提高水果的质量，大小和甜度。
- 对天气变化和疾病的抵抗力更强。

非凡效果 – 香蕉

- 提高花朵形成率。
- 更大粒的果实。
- 果实更甜。

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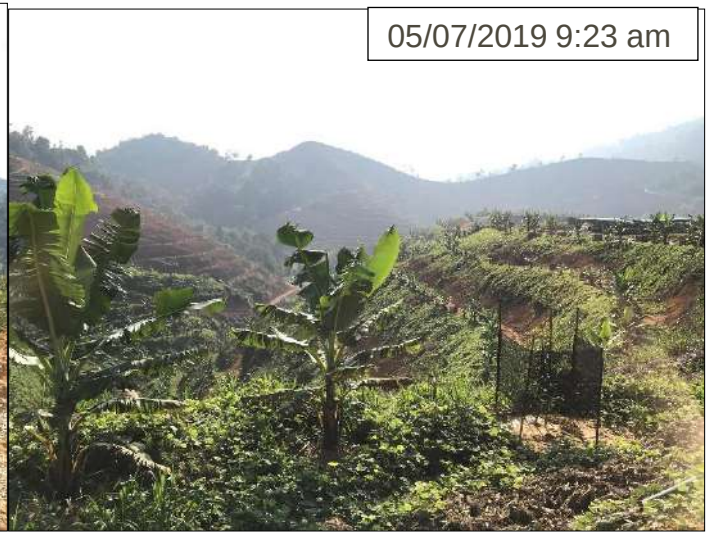
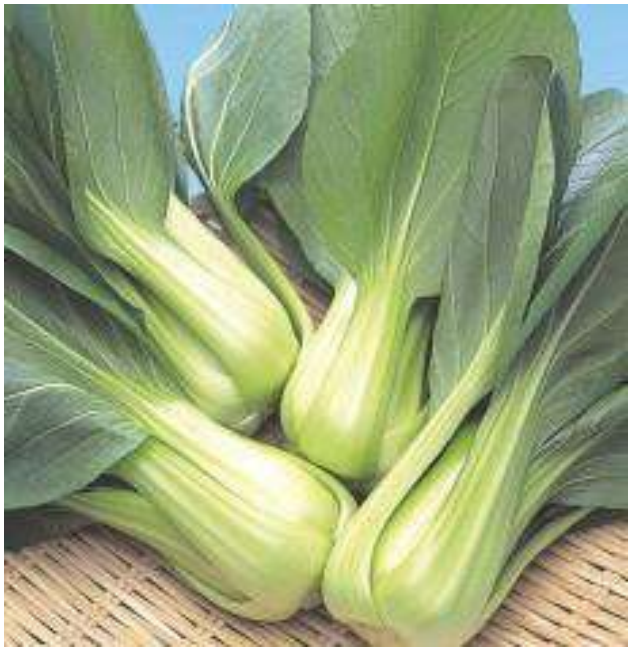


非凡效果 – 西瓜 / 蜜瓜

- 更高的结果率。
- 水果不容易开裂。
- 更甜蜜和多汁的水果。
- 更厚和丰满的果实。

非凡效果 – 蔬菜

- 光亮叶面。
- 更大和更宽的叶子。
- 更丰厚的叶子。



非凡效果 – 花朵

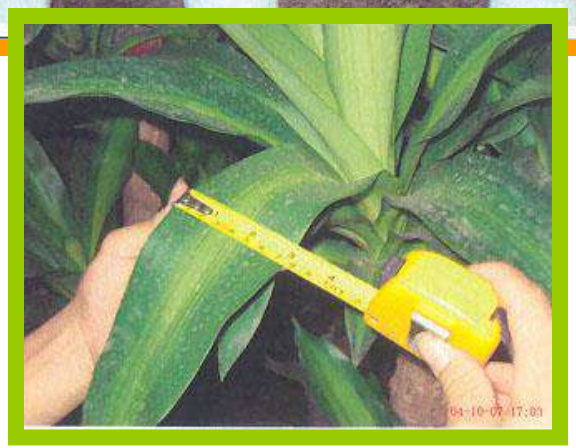
- 茂盛的树叶。
- 鲜艳的花朵。

之后

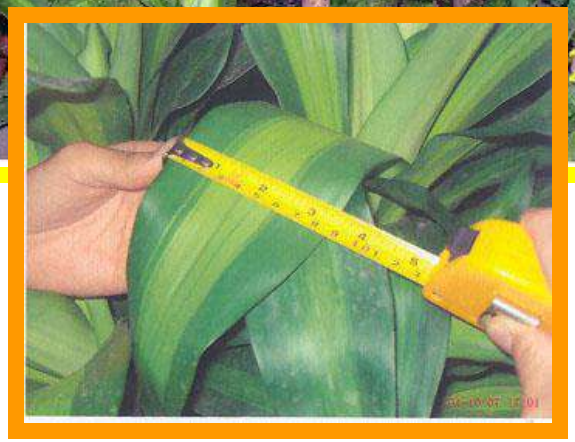
之前

非凡效果 – 花类

之前



之后



非凡效果 – 花类

60天的应用后，蓬勃发展的叶子与完全绽放璀璨的花类。.

谢谢你

IBG Manufacturing Sdn. Bhd.

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