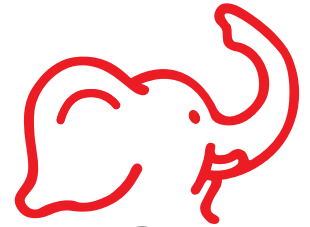


**ALL COSMOS  
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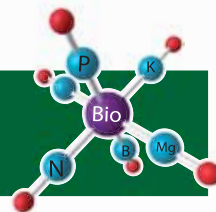


**RealStrong®**  
Bio-Chemical Fertilizers



**AgriCulture Innovation**

# RealStrong Bio-Chemical Fertilizers



RealStrong Bio-Chemical Fertilizers are manufactured based on scientific findings of studies on soil and plant nutrition. Through bio-technology, "live" effective microorganisms (EM) are mixed with high quality organic raw materials to produce the right balance of nutrition for plants.

## Main Characteristics

### 3 SYSTEMS WORKING IN SYNERGY

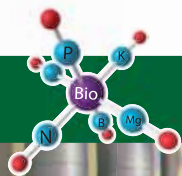
The organic materials in RealStrong Bio-Chemical Fertilizers increase plant efficiency and effectiveness in nutrient absorption. The EM present in the fertilizers encourage root growth, fruit set and stronger shoots production/ formation.

### INCREASE SOIL NUTRIENT ABSORPTION

As a result of its organic nature, RealStrong Bio-Chemical Fertilizers help to increase soil nutrient and water retention capacity. These facilitate absorption of minerals, such as zinc, magnesium, calcium and manganese. RealStrong Bio-Chemical Fertilizers also help loosen the soil. Soils become healthier and better to support plant growth and to increase plant weight and prolong productive life.

### INCREASE FRUIT SET AND FLAVOUR

RealStrong Bio-Chemical Fertilizers significantly increase the quality of fruits and lower the nitric acid content in vegetables. Fruits and vegetables are juicer and retain their natural flavor. Fruit trees grown in soil fortified with RealStrong Bio-Chemical 3 in 1 fertilizers can also shorten the harvesting time of fruits, giving you more harvests in a year as a result.

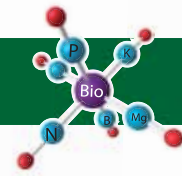


## 3 in 1 Bio-Chemical Fertilizers



**RealStrong Bio-Chemical Fertilizers** are fertilizers combining chemical, organic matters and microorganisms. Research and production of microorganisms are carried out in a modern laboratory.

# Three Systems Working in Synergy



RealStrong Bio-Chemical Fertilizers

## INORGANIC MATERIALS

Provide sufficient and complete inorganic nutrients (N, P, K, Mg, B + TE) for vegetative growth and fruit production.

## ORGANIC MATTERS

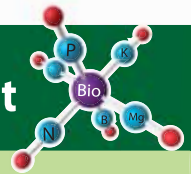
Control release of nutrients and work more efficiently and effectively for soil absorption and plant nutrition.

## EFFECTIVE MICRO-ORGANISMS (EM)

The microorganisms contained in the 3 in 1 fertilizers do the job of fixing N and dissolving P and K. Bacteria and fungus species antagonistic to Basal Stem Rot (*Ganoderma boninense*) are being studied.

- Help increase soil fertility
- Assist in neutralising toxin and strengthening fertilization
- Reduce disease incident and severity

# RealStrong Bio-Chemical Fertilizers Content



## EFFECTIVE MICRO-ORGANISMS (EM)

### Actinomyces Series

Able to decompose protein into amino acids and further break down into NH<sub>3</sub>, CO<sub>2</sub> and H<sub>2</sub>O. Leaving an alcohol like secretion that helps to remove smell and to prevent damage by pests

### Growth Factor Producing Bacteria Series

Ability to excrete hormone to stimulate plant growth

### Lactobacillus Series

Strong bactericidal characteristic, inhibit harmful bacteria from reproduction and decompose lignin and cellulose

### Nitrifying Bacteria Series

To change nitric acid into nitrate for plant absorption

### Nitrogen Fixing Series

Able to convert nitrogen in the air into a form for plant absorption

### Phosphoric Acid Releasing Series

Convert organic phosphorus into inorganic phosphoric for plant absorption

### Photosynthetic Bacteria Series

Convert nucleic acid, nitride and sugar into nutrient for both crops and microorganisms

### Yeast Series

Enhance growth and cell division of roots and benefit the reproduction of microorganisms

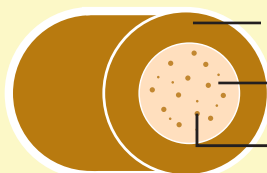
## ORGANIC MATTERS & ZEOLITE

- Cocoa
- Coffee
- Rice bran
- Palm bunch ash
- Palm decanter cake
- Volcanic ash (zeolite)

## CHEMICALS

**N:** Urea, Ammonium Sulphate (AS)  
**P:** Rock Phosphate/ Mono-Ammonium Phosphate (MAP)  
**K:** Muriate of Potash (MOP), Sulphate of Potash (SOP)  
**Mg:** Kieserite/ Magnesium Sulphate

## 3 IN 1 FERTILIZER

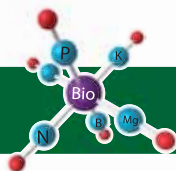


**Chemical:** N-P-K complete nutrient

**Organic:** Slow release in nutrients and improve soil structure

**Effective microorganisms:** Time release of nutrient

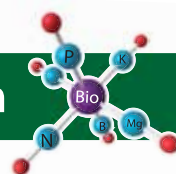
# Fertilization Program



CROP	TYPE OF REALSTRONG FERTILIZER	APPLICATION RATE	METHOD OF APPLICATION
Short term vegetables	5-5-5 : 250g/m <sup>2</sup> 11-11-11: 150g/m <sup>2</sup>		Apply 5-5-5 or 11-11-11 during ploughing
Long term vegetables	5-5-5 : 250g/m <sup>2</sup> 11-11-1 : 50g/plant 12-6-12 : 50g/plant 8-8-20 : 50g/plant		Apply 5-5-5 during ploughing, 11-11-11 7 days after germination, 12-6-12 every 10 days until flowering and 8-8-20 during fruit setting until end of harvesting period
Fruits	5-5-5 : 2-4kg/plant 11-11-11: 2-3kg/plant 8-8-20 : 2-3kg/plant		Apply 5-5-5 after harvesting, 11-11-11 at flowering stage and 8-8-20 at fruit setting (ping pong size)
Paddy	11-11-11: 200kg/ha 8-8-20: 200kg/ha		Apply 11-11-11 during ploughing, day 28 and day 45. Then apply 8-8-20 at 60 days after planting

This general recommendation serves as a guide, depending on plant age, soil nutrient status, weather conditions and management practices.

# Fertilization Program for Oil Palm



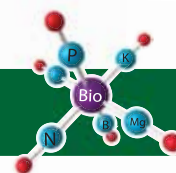
Age (Year)	Month after planting	Type of RealStrong Fertilizer	Application (gram/ tree)
	0 (plant hole)	Soil Conditioner	700
1	2	RS1	500
	6	RS1	800
	9	RS1	800
	12	RS1	1200
2	15	RS1	2200
	19	RS1	2200
	24	RS1	2200
3	28	RS1	2300
	32	RS1	2300
	36	RS1	2300
4	40	MPOB F4	2500
	44	MPOB F4	2500
	48	MPOB F4	2500
5	52	MPOB F4 / Max K	2500
	56	MPOB F4 / Max K	2500
	60	MPOB F4 / Max K	2500
For palms 6 -15 years and yield more than 25 mt/ha/year. Fertilize 3 or 4 times a year with MPOB F4.			3000 3000 3000
For palms 15 years above and yield more than 25 mt/ha/year. Fertilize 3 or 4 times a year with MPOB F4 or Max K.			3000 3000 3000












Note:	%N	%P <sub>2</sub> O <sub>5</sub>	%K <sub>2</sub> O	%Mg
RS1	10.0	5.4	16.2	2.7 + 0.5% B
MPOB F4	9	6	18	2
Max K	8	8	20	2

\* For palms yield more than 30mt/ha/year fertilizer application rate should be increased to 10kg to 12kg/tree/year depending on amount of yield increase.

This general recommendation serves as a guide, depending on plant age, soil nutrient status, weather conditions and management practices.

# RealStrong Bio-Chemical Fertilizers



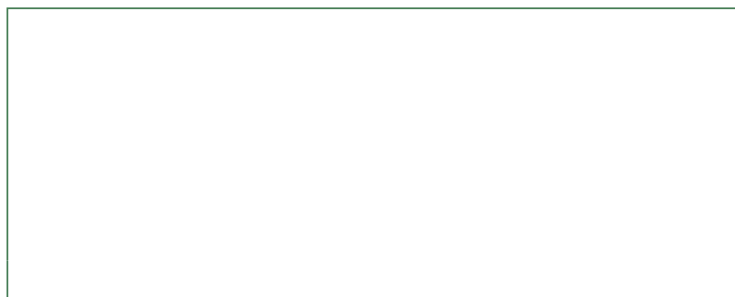
	USAGE	CROP
<b>MPOB F4</b> <b>9-6-18-2 + TE</b>	 Specifically designed for oil palm and is most suited for hilly and problematic soil.	Oil palm
<b>SOIL CONDITIONER</b> <b>5-5-5-2 + TE</b>	 Contains high concentration of microorganisms which can help to increase soil pH and to improve soil fertility. Thus plants are more resistant to pest and diseases.	Crop of all types
<b>PELADANG 1/ RS 1</b> <b>10.0-5.4-16.2-2.7-0.5+TE</b>	 Suggested to be used during early fruit set stage to increase fruit size.	Oil palm (1- 3 years old)
<b>MAX K</b> <b>8-8-20-2 + TE</b>	 Suggested to be used during early fruit set stage to increase fruit size and sweetness.	Flowers, fruits, vegetables, paddy and oil palm (15 years above)
<b>MAX GROWTH</b> <b>11-11-11-2 + TE</b>	 Contains high concentration of NPK and is suggested to use after harvesting to provide balanced nutrients.	Crop of all types
<b>4-16-16-2 + TE</b>	 High ratio of P and K to induce flowering.	Flowers, fruits and vegetables
<b>12-6-12-2 + TE</b>	 Contains higher ratio of N and K to increase fruit setting and to prevent fruit abortion.	Flowers, fruits and vegetables
<b>10-15-5-2 + TE</b>	 Recommended to apply during planting of root crops as high concentration of N and P can improve root formation.	Fruits, vegetables and paddy
<b>15-5-20-2 + TE</b>	 Provides high ratio of K. Potassium is needed to form fruit fibre.	Fruits
<b>25-5-5 + TE</b>	 For greener foliage.	Paddy
<b>10-5-20 + TE</b>	 Increases fruit setting and prevents fruit abortion.	Fruits and oil palm

RealStrong Bio-Chemical Fertilizers could effectively improve “damaged” soil structure caused by excessive and prolonged use of inorganic fertilizers. At the same time, it can improve plant resistance to pest and diseases.



  
**RealStrong®**  
Bio-Chemical Fertilizer

# RealStrong Fertilizers Are Suitable For All Types Of Crops: oil palm, flowers, vegetables, fruits, and paddy



**AgriCulture Innovation**

**All Cosmos Industries Sdn Bhd**

**HEADQUARTERS:** PLO 650, Jalan Keluli 7, Pasir Gudang Industrial Estate, 81700 Pasir Gudang, Johor, Malaysia. TEL : +607-252 3788 FAX : +607-251 2588/+607-252 5298  
**JOHOR MANUFACTURING PLANT:** PLO 442, Jalan Suara, Pasir Gudang Industrial Estate, 81700 Pasir Gudang, Johor, Malaysia. TEL : +607-252 8066 FAX : +607-255 3904  
**SABAH MANUFACTURING PLANT:** POIC, Lot 50 & 51, Phase 2, Jalan Tengah Nipah 5.5 KM, 91100 Lahad Datu, Sabah, Malaysia. TEL: +6089-863 280 FAX: +6089-863 290  
**KL OFFICE:** No.42-2, Jalan PJU 5/11, Dataran Sunway, Kota Damansara, 47810 Petaling Jaya, Selangor, Malaysia. TEL : +603-6141 6758 FAX : +603-6141 6548

**EMAIL:** sales\_marketing@allcosmos.com **WEBSITE:** www.allcosmos.com