



**ORGANIC INSECTICIDES**

**ORGANIC FERTILIZER**

**ORGANIC BIOSTIMULANTS**

**ORGANIC FUNGICIDES**

**SOIL CONDITIONERS**

**BIOLOGICAL INSECTICIDES**

**BRINGING GROWTH IN AGRI**







**SEED2HARVEST**  
BRINGING GROWTH IN AGRICULTURE







# ORGANIC FERTILIZER & BIO STIMULANT





# iBATECH®

**A Natural Biostimulant**

## WHAT IS iBATECH®

**iBATECH®** is a patented bio-stimulant technology, organic and natural, containing a combination of several flavonoids that display antimicrobial properties as well as can increase the polyphenolic and sugar content of plants, thereby improving overall plant health and yield. **iBATECH®** improves the uptake of nutrients in the crops.

### NUTRIENT CONTENT (mg/kgj) OF THE NATURAL EXTRACT

%N	p	K	s	Ca	Mg	Zn	Cu	Mu	Fe	B	Mn
0.12	110.0	1138	108.6	6.97	5.92	3.20	1.92	0.06	2.97	4.65	1.88



### iBATECH® SCIENTIFICALLY PROVEN BENEFITS

- A natural, eco-friendly product
- Increases chlorophyll and sugar content of crop – thereby improving its yield and quality
- Increases polyphenolic content of crops – thereby improving crop health
- Enhances the natural resistant mechanisms of the crop
- **Cost-effective** –1,5L – 2L iBATECH® per hectare (1 single application)
- Increase °Brix
- Increase antioxidant **flavonoids**
- **Disease control** effects
- Suitable to mix with fungicides
- Reduce **surface tension** of water
- Increased photosynthesis
- Improve **uptake** of nutrients
- Improved **root growth**
- Nutritional and yield quality enhancement
- **Abiotic** and **biotic** stress tolerance



# iBATECH®

## A Natural Biostimulant

### DOSAGE AND APPLICATION

#### DIRECTIONS FOR USE

##### **Home and garden**

Dilute 10ml to 1L water foliar spray on crops and lawns

##### **Small, medium and large farm operations**

Dilute 1.5L -2L with 200L water per hectare (1 single application)

#### APPLICATION AND USES

##### **Flowers, vegetables and Orchards**

Spray every 1 – 2 weeks in the morning or evening as a fine mist

##### **Houseplants**

Spray lightly every 1 -2 weeks

##### **Lawns and Pastures**

Spray every 2 -4 weeks in the morning or evening as a foliar feed





# iBATECH®

A Natural Biostimulant

## Control of Powdery mildew and Phytophthora in tunnel tomatoes



### Dualex™ readings collected for seedling fertigation treatments with iBATECH® and algicide after a report of root development and growth medium problems

iBATECH® + Algicide applied via fertigation system on 10 July 2015. The Flavonoid (Flav) readings increased, while the Chlorophyll (Chl) and Nitrogen (NBI®) readings decrease after the iBATECH® & Algicide application. On 22 July general seedling and root growth improvements were observed, associated with improved Chl, Flav and NBI® Dualex™ readings

Turnips/ seed leaves		Chl	Flav	Anth	NBI
11-Jul-15	Av	18,02	0,90		21,13

Turnips / first leaves		Chl	Flav	Anth	NBI
11-Jul-15	Av	21,21	1,27		17,05

Turnips – leaves		Chl	Flav	Anth	NBI
22-Jul-15	Av	31.07	1.35		23.46

Increased root development with iBatech®





## Do you know what chlorophyll can do for you?

Dualex™ readings (2/12/2015) on plum leaves in Grabouw demonstration trial after 3<sup>rd</sup> application

Treatment	iBATECH Rate / 100 L	Chl	Flav	Anth	NBI®
Sprayed with iBATECH®	1 L	46,39	1,81	0,0	25,98
Not sprayed with iBATECH®	0	43,38	1,83	0,0	23,96
Increase		7%			8%

A fruit farmer in Grabouw area reported old plum trees with fruit yield losses. I told the farmer that the iBATECH biostimulant can increase chlorophyll. Farmer was not impressed, responding “I don’t need beautiful green trees”. Farmer observed visual increase of tree vigour, fruit quality and yield. Dualex readings showed increase chlorophyll and nitrogen uptake. (Chlorophyll (Chl), Flavonoids (Flav), Anthocyanin (Anth), Nitrogen-Based Index (NBI®))



## Department Correction Service Pollsmoor Prison Vegetable Farm, Tokai

### PROBLEM

Purple leaves and stunted growth in the cabbage transplants are an indication of increased Anthocyanin (Anth) compounds in the leaves due to cold stress.

### RESULTS AFTER APPLYING iBATECH<sup>®</sup>

iBATECH<sup>®</sup> applications improved the nitrogen uptake (NBI<sup>®</sup>), increased Chlorophyll (Chl) levels, and reduced the Anth levels.



Cabbage with purple leaves – 19/10/2015



Cabbage leaves on 22/10/2015



# HYDROPONIC SPROUTS AND MICROGREENS TRIALS AND TESTIMONIES

## LOCATION

Namibian farmer, Rehoboth

## PROBLEM

He experienced germination and growth problems with hydroponic barley sprouts, for livestock feed

## RESULTS AFTER APPLYING iBATECH

**iBATECH**<sup>®</sup> application improved the germination and growth of the barley sprouts.

Barley fodder production for livestock feed, a major feed solution in drought stricken areas.



**iBATECH**<sup>®</sup>  
A Natural Biostimulant

## WHAT IS BIOBOOST

BioBoost is a 100% Organic liquid fertilizer used for plant growth and root development especially in stressful conditions. BioBoost contains more than 60 Minerals and 18 Amino Acids and is 100% absorbable, and does not leach from soil and addresses almost every problem caused by chemical fertilisers, herbicides, pesticides and fungicides.

TYPICAL PRODUCT ANALYSIS			
MACRO ELEMENTS		MICRO ELEMENTS	
<b>NITROGEN (N)</b>	<b>24g/kg</b>	<b>MANGANESE (Mn)</b>	<b>4g/kg</b>
<b>PHOSPHOROUS (P)</b>	<b>5g/kg</b>	<b>IRON (Fe)</b>	<b>140mg/kg</b>
<b>POTASSIUM (K)</b>	<b>3g/kg</b>	<b>COPPER (Cu)</b>	<b>3mg/kg</b>
<b>CALCIUM (Ca)</b>	<b>4g/kg</b>	<b>ZINC (Zn)</b>	<b>20mg/kg</b>
<b>MAGNESIUM (Mg)</b>	<b>1g/kg</b>	<b>BORON (B)</b>	<b>8mg/kg</b>
<b>Ph 3.5 – 4.0</b>		<b>PARTICLE SIZE 100 – 200 MICRON</b>	







## WHY SHOULD I USE BIOBOOST?

BioBoost restores and rebuilds soil fertility by feeding microbes, which then feeds the roots, shoots and foliage of the plant.

The **FOCUS** has shifted from **CROP PROTECTION** to **SOIL FERTILITY**

A mineral deficiency in your body CANNOT be permanently fixed with supplements. It can only be fixed by changing your diet and balance your gut bacteria.

The same rule applies to the soil. Feed the **SOILBIOTA** with organic matter and **NOT** chemicals

## WHAT VISIBLE DIFFERENCES WILL I NOTICE AFTER USING BIOBOOST

- Faster healthier growth with bigger dark green leaves
- More blossoms, more fruit
- Plants will last much longer and keep on producing blossoms and fruit
- More uniform crop
- Plants are more pest and disease resistant due to higher sugar levels
- Plants perform better in dry and wet conditions





## WHY SHOULD I USE BIOBOOST?

- **It is 100% organic**
- **Highest nutrient value per volume compared to any other organic fertilizer (more than 60 minerals and 18 amino acids)**
- **Highest C:N ratio of any fertilizer on the market (Ratio 7:1)**
- **Lowest carbon footprint of all fertilizers (even lower than making compost)**
- **Suitable for all types of plants from grass to shrubs to trees**
- **Can be applied as a soil drench or a foliar spray**
- **The nutrients in BioBoost are a quick and direct stimulant to the plant's roots and leaves**
- **100% absorbable and does not leach from the soil**
- **Cost effective ... 1L dilutes to 100L of Water and covers an area of +-1500m<sup>2</sup>**
- **Good for the environment... the birds and the bees LOVE IT, because its NATURAL**







## WHAT ARE THE BENEFITS OF BIOBOOST?

- **Best broad spectrum nutrient provider for any type of plant from grass to shrubs to trees**
- Every time you **fertilize your plants**, you also **feed the soil-microbes**.
- **Build soil structure and cannot leach**
- **Balance the pH of the soil**
- **More nutrient value per volume than any other fertilizer on the market**
- **On top of the mineral value ... crops can benefit from 18 essential enzymes and hormones**





## HOW TO APPLY BIOBOOST?

- Soil drench with a watering can or through an irrigation system
- Fertigation system
- Foliar feed – spraying it on the crops
- Boom sprayer
- Centre pivot / Mist Blower

## HOW OFTEN SHOULD I APPLY BIOBOOST AND HOW MUCH ?

BioBoost can be applied every 1 – 4 weeks depending on the crop and soil condition.

CROP TYPE	QTY	APPLICATION METHOD
FEEDING THE SOIL BEFORE PLANTING	10L-20L PER HECTARE	SOIL DRENCH
SMALL GRAINS	3L-5L PER HECTARE	FOLIAR SPRAY
VEGETABLES	5L-9L PER HECTARE	FOLIAR SPRAY
VINEYARDS	5L-9L PER HECTARE	FOLIAR SPRAY
ORCHARDS	6L-10L PER HECTARE	FOLIAR SPRAY
SEED INNOCULATION/COATING	5ML PER KG OF SEED	ALL TYPES OF SEEDS
ROOT DIP	250ml PER 10L WATER	SOAK FOR 30MIN
HOME AND GARDEN	10ML PER 1 LITRE WATER	FOLIAR SPRAY



## FARMER TESTIMONIAL

**Farmer Laphahang – Maseru – Lesotho – December 2022**



**Tomatoes – 10 weeks  
and harvesting**



**Cucumbers – 10 weeks  
and harvesting**



**First Harvest**





# ORGANIC AND BIOLOGICAL INSECTICIDE





# BIO-NEEM

Reg.No. L7052 (Act 36 of 1947)

## WHAT IS BIO-NEEM

Bio-Neem is an emulsion concentrate contact and stomach insecticide for the control of biting and stinging insect. The active ingredient in Bio-Neem (Azadirachtin) is extracted from the world-renowned Indian Neem Tree and breaks the natural reproductive cycle of over 200 common insect types including whiteflies, leafminers, mealybug, thrips, fruit flies, leafhoppers, red spider mite, weevils and many more.

## MODE OF ACTION

**As a Feeding Deterrent** – reduces the level of the insect hormone Ecdysome the insect's molting process gets disrupted preventing the immature larvae from developing into an adult.

**As an Insect Growth Regulator** – Azadirachtin exhibits growth regulating properties that are most effective against the immature stages of insects.



# BIO-NEEM

Reg.No. L7052 (Act 36 of 1947)

## APPLICATION

- Apply as a foliar spray, soil drench/growing medium application
- Spray onto all the leaves until run off and around the plant on the soil
- Repeat after 5-7 days if the Beneficial insect population is low
- Do not apply before watering
- Only water your crops 8 hours after applying Bio-Neem
- Apply early morning or late afternoon

## DIRECTIONS

- Dilute 5ml with 1l water
- Dilute 500ml with 100L water

## COVERAGE

- 1L Mix will cover an area of 5m<sup>2</sup> - 10m<sup>2</sup>
- 300L – 500L mix will cover 1Ha depending on the insect stage of development (1.5L – 2.5L/ Hectare)



Bio-Neem can be used together with Xterminator if the infestation is high.



# BIO-NEEM

## TARGET PESTS

AMERICAN BOLLWORM	FLAT MITES	RED SPIDER MITE
ANASTATIA BUG	FRUIT NIBBLER	RUST MITE
ANTS	GREATER CABBAGE MOTH (LARVAE)	SEED MAGGOT
APHIDS (VARIOUS SPP)	GREY MITE	SEMI-LOOPER (PLUSIA LOOPER)
APPLE WOOLY APHID	GROUND	SILVER MITE
ASTYLUS BEETLE (LARVAE)	LEAF ROLLERS	
BAGRADA BUG	LEAFHOPPER	SOFT GREEN SCALE
BLACK MAIZE BEETLE	LEAFHOPPER (JASSID)	SPINY BOLWORMS (VARIOUS SPP).
BLACK SAND MITE (RED-LEGGED EARTH MITE)	LOWVELD MITE	STAINERS (VARIOUS SPP).
BUD MITE	MEALYBUGS	SYAGRUS BEETLE
CHAFER BEETLES (VARIOUS SPP)	MILLIPEDES	THRIPS
CMR BEETLES (VARIOUS SPP).	MITE	TREE CRICKETS
CODLING MOTH	ORANGE DOG CATERPILLARS (VARIOUS SPP).	TUBER MOTH
CUTWORMS	ORIENTAL FRUIT MOTH	WEEVIL (SNOUT BEETLE)
FALSE CHINCH BUG	PSYLIA	WHITE FLY (NYMPHS)
FALSE CODLING MOTH	RED BOLWORM	
NEMATODES (VARIOUS SPP)		

# BIO-NEEM

## CROPS

APPLE & PEARS	CHICORY	LUPINS	POTATOES
APRICOTS	CITRUS	MAIZE	POMEGRANATE
AVOCADOS	COFFEE	MANGOES	PRUNES
BANANAS	COTTON	NECTARINES	QUINCES
BARLEY	CRUCIFERAE	OAK TREES	RYE
BEANS	CUCURBITS	OATS	SORGHUM (GRAIN)
BERRIES	FIGS	OLIVES	STRAWBERRIES
BLUEBERRY	GINGER	ONIONS, LEEKS, CHIVES	SUGAR CANE
CASHEW NUT	GRANADILLA	PAPAYA	SUNFLOWERS
CAPSICUM	GRAPES	PECAN NUT	SWEET CORN
CARROTS	GROUND NUTS	PEACHES	TOBACO
CELERY	GUAVAS	PEAS	TOMATOES
CHERRIES	HAZELNUT	PEPPERS	WALNUTS
CHICORY	HOPS	PERSIMONS	WHEAT
CITRUS	KIWI FRUIT	PINEAPPLES	
COFFEE	LETTUCE	PLUMS	
CRUCIFERAE-CABBAGE, CAULIFLOWER, BROCCOLI, BRUSSEL SPROUTS			
CURCUBITS-MELONS, SQUASH, CUCUMBERS, PUMPKIN			
BEANS-GREEN BEANS, DRY BEANS, SOY BEANS			
ORNAMENTALS, FLOWERS, LAWNS			



# INSECTS

**american bollworm**



**american leaf miner**



**Antestia bug**



**Aphid (Russian)**



**Apple woolly aphid**



**Astylus beetle (larvae)**



**Bagrada bug**



**Leafhopper**



**Leafhopper (Jassid)**



**Low veld mite**



**Mealy bugs**



**Orange dog caterpillars**



**Oriental fruit moth**



# INSECTS

**Black maize beetle**



**Black sand mite**



**Bollworm**



**Bud mite**



**Chafer beetles**



**CMR beetles**



**Cutworms**



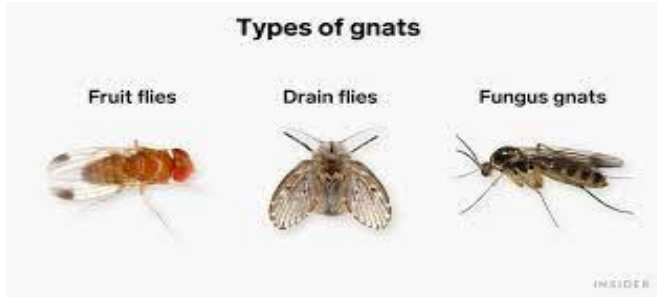
**False chinch bug**



**Flat mites**



**Fruit flies**



**Fruit nibbler**



**Greater cabbage moth**





# INSECTS

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**Grey mite**



**Ground weevil**



**Red spider mite**



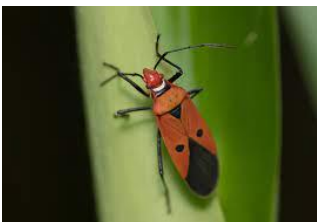
**Semi-looper**



**Spiny bollworms**



**Stainers**



**Syagrus beetle**



**Thrips**



**Tree crickets**



**Tuber moth**



# EXTERMINATOR

Reg.No. L7037 (Act 36 of 1947)

## WHAT IS EXTERMINATOR

An suspension concentrate contact and stomach insecticide for the control of biting and stinging insects on crops as listed.

## MODE OF ACTION

The naval oil contains terpenes of which d-limonene dominates. (The terpenes are surfactants used in degreasers and soaps to brake down fats.) The ingredient d-limonene instantly strips away a protective wax coating from the exoskeletons of insects and by penetrating the spiracles (breathing holes) will inflict cell damage to the cell membranes of the cuticle causing death. Pyrethrum has a narcotic action on insects and the synergist PBO prolongs this to death. **Xterminator** is formulated to allow the insect to recover from narcosis in order to allow the insect to emerge from cover when the d-limonene action will inflict death. (Chinch bug application - post harvest) **Xterminator** is formulated to minimise damage to beneficial insects and by intervals in extant of 7 days many will recuperate. Do not use more than 12 times a year on same location. **Xterminator** is toxic the soil artropodes. **Xterminator** must not be used in hydroponic grown crops where water is treated by fish.



# EXTERMINATOR

Reg.No. L7037 (Act 36 of 1947)

## APPLICATION

- Apply as a foliar spray, soil drench/growing medium application
- Spray onto all the leaves until run off and around the plant on the soil
- Repeat after 5-7 days if the Beneficial insect population is low
- Do not apply before watering
- Only water your crops 8 hours after applying Exterminator
- Apply early morning or late afternoon

## DIRECTIONS

- Dilute 5ml with 1l water
- Dilute 500ml with 100L water

## COVERAGE

- 1L Mix will cover an area of 5m<sup>2</sup> - 10m<sup>2</sup>
- 300L – 500L mix will cover 1Ha depending on the insect stage of development (1.5L – 2.5L/ Hectare)



Exterminator can be used together with Bio-Neem if the infestation is high.



# EXTERMINATOR

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NEMATODES (VARIOUS SPP)		

# EXTERMINATOR

## CROPS

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# INSECTS

**american bollworm**



**american leaf miner**



**Antestia bug**



**Aphid (Russian)**



**Apple woolly aphid**



**Astylus beetle (larvae)**



**Bagrada bug**



**Leafhopper**



**Leafhopper (Jassid)**



**Low veld mite**



**Mealy bugs**



**Orange dog caterpillars Oriental fruit moth**



# INSECTS

**Black maize beetle**



**Black sand mite**



**Bollworm**



**Bud mite**



**Chafer beetles**



**CMR beetles**



**Cutworms**



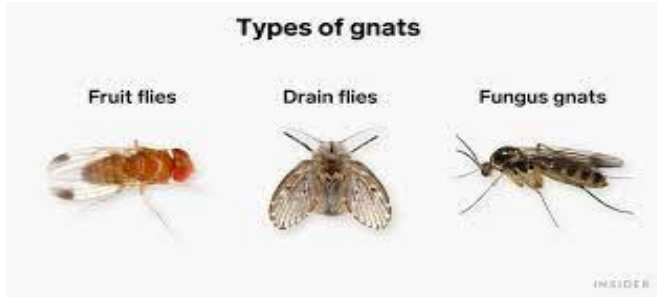
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**Flat mites**



**Fruit flies**



**Fruit nibbler**



**Greater cabbage moth**





# INSECTS

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**Grey mite**



**Ground weevil**



**Red spider mite**



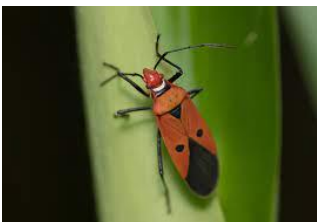
**Semi-looper**



**Spiny bollworms**



**Stainers**



**Syagrus beetle**



**Thrips**



**Tree crickets**



**Tuber moth**





# BIO-INSEK

## WHAT IS BIO-INSEK

Bio-Insek is a suspension concentrate biological insecticide for the control of adult insects, their larvae and pupae (not sealed cocoons) on crops listed. Spores of the fungus, when landing on insects, parasitizes the body and if present in the soil, will parasitize the larvae and even the eggs of the insects.



# BIO-INSEK

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## **MODE OF ACTION**

- The conidia of entomopathogenic fungi adhere to the insect cuticle by means of hydrophobic interaction between the spore wall and epicuticle lipids. The conidia germinate, and the germ tube penetrates the cuticle, using a specific series of enzymes, which in turn degrade the lipids protein and chitin in the insect cuticle. In the insect body, the fungus multiplies in the haemocoel as a blastospore, or yeast-like cell, and enzymes begin to destroy the internal structures of the host insect causing morbidity within 36-72 hours.
- Reduced feeding and immobility are rapidly evident, and the insect dies within 4 to 10 days post-infection.
- The time to death will depend on the insect species, age and conidial dose. After death, the blastospores transform into mycelia, which emerge through the cuticle and form spores. These cover the cadaver as a characteristic white growth. Sporulation occurs only in conditions of high humidity.
- The fungi are natural occurring soil borne parasites on insects. Only during the pupae stage the insect cannot be attacked, but before and after. The fungi can survive on dead plant material and spores can survive for over 24 months in healthy soils with a high organic materials content.
- Both fungi are saprophytes, thus applying Bio-Insek will temporarily cause a peak in the population of *Beauveria Bassiana* and *Metarhizium anisoplae* on soils with lots of plant residues. Creating such peaks leads to a dense net of spores in the top soil, therefore increasing the chance of the spores to attach itself to the insect or its larvae. Knowing the life cycles of insects is important for the efficacy of Bio-Insek. Best efficacy can be obtained if the peak coincides with the start or end of the cycle in the soil.
- Foliar application of Bio-Insek is recommended only if infestation is very high, since beneficial insects will be attacked as well.
- Mixing Bio-Insek into good compost before spreading or spraying after compost application will reduce threat of insects living in the soil and/ or having a soil cycle.
- Bio-Neem added to the spray mixture has the advantage of giving the spore a fair chance to survive a brief dry spell shortly after application and secondly make the insect more vulnerable for spore attack.

# BIO-INSEK

## DIRECTIONS FOR USE

- Use only as directed
- The soil should preferably be moist before applying Bio-Insek by means of spray or through irrigation system. After application irrigate in order to drench spores into top soil. Thumb rule is to have 6 mm irrigation before and 6 -12 mm irrigation after depending on the type of soil. The lighter the soil the less water.
- Ensure good coverage (wetting) of all foliar parts, particularly under leaves. Do not irrigate by means of overhead or sprayers within 12 hours after application.
- 1 L / ha-----foliar application, to the point of runoff.
- Adding Bio- Neem at 500ml / 100 l will increase efficacy.
- 1 L / ha-----soil/ growth medium application by drenching.
- Adding Bio-Neem at 5 L / ha will increase efficacy
- Mode of action must be considered for best timing.





# BIO-INSEK

## TARGET PESTS

AMERICAN BOLLWORM	FLAT MITES	RED SPIDER MITE
ANASTATIA BUG	FRUIT NIBBLER	RUST MITE
ANTS	GREATER CABBAGE MOTH (LARVAE)	SEED MAGGOT
APHIDS (VARIOUS SPP)	GREY MITE	SEMI-LOOPER (PLUSIA LOOPER)
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NEMATODES (VARIOUS SPP)		

# BIO-INSEK

## CROPS

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AVOCADOS	COFFEE	MANGOES	PRUNES
BANANAS	COTTON	NECTARINES	QUINCES
BARLEY	CRUCIFERAE	OAK TREES	RYE
BEANS	CUCURBITS	OATS	SORGHUM (GRAIN)
BERRIES	FIGS	OLIVES	STRAWBERRIES
BLUEBERRY	GINGER	ONIONS, LEEKS, CHIVES	SUGAR CANE
CASHEW NUT	GRANADILLA	PAPAYA	SUNFLOWERS
CAPSICUM	GRAPES	PECAN NUT	SWEET CORN
CARROTS	GROUND NUTS	PEACHES	TOBACO
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COFFEE	LETTUCE	PLUMS	
CRUCIFERAE-CABBAGE, CAULIFLOWER, BROCCOLI, BRUSSEL SPROUTS			
CURCUBITS-MELONS, SQUASH, CUCUMBERS, PUMPKIN			
BEANS-GREEN BEANS, DRY BEANS, SOY BEANS			
ORNAMENTALS, FLOWERS, LAWNS			

# INSECTS

**american bollworm**



**american leaf miner**



**Antestia bug**



**Aphid (Russian)**



**Apple woolly aphid**



**Astylus beetle (larvae)**



**Bagrada bug**



**Leafhopper**



**Leafhopper (Jassid)**



**Low veld mite**



**Mealy bugs**



**Orange dog caterpillars**



**Oriental fruit moth**





# INSECTS

**Black maize beetle**



**Black sand mite**



**Bollworm**



**Bud mite**



**Chafer beetles**



**CMR beetles**



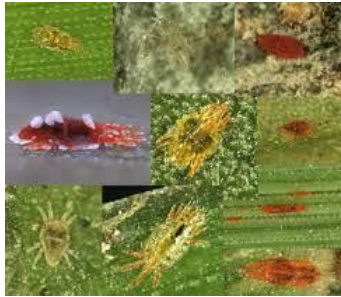
**Cutworms**



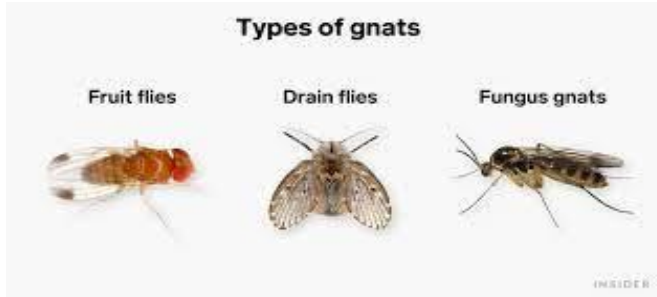
**False chinch bug**



**Flat mites**



**Fruit flies**



**Fruit nibbler**



**Greater cabbage moth**



# INSECTS

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**Grey mite**



**Ground weevil**



**Red spider mite**



**Semi-looper**



**Spiny bollworms**



**Stainers**



**Syagrus beetle**



**Thrips**



**Tree crickets**



**Tuber moth**







# BIOLOGICAL FUNGICIDE



# BIO-TRICHO

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## WHAT IS BIO-TRICHO

Bio-Tricho is a biological fungicide consisting of phyllosphere micro-organisms specifically for controlling Botrytis and root diseases such as Rhizoctonia, Phytophthora, Pythium, Fusarium, etc. As microparasites, it feeds on damaging plant pathogens.

## MODE OF ACTION

- The fungus *Trichoderma harzianum* occurs naturally in soil.
- *Trichoderma harzianum* characteristically overgrows pathogenic fungi and parasitizes them.
- The *Trichoderma harzianum* will flourish in organic media and assist in breaking these down.
- *Trichoderma harzianum* will follow root growth giving protection against various soil-borne diseases.



# BIO-TRICHO

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## INSTRUCTIONS

- Compatibility: Can be mixed with Copper based Fungicides at recommended dosages
- Spray onto all the leaves until run off and around the plant on the soil
- Not to be mixed with other fungicides and or sterilizers
- Do not apply before watering and NEVER USE THEE SAME TIME WITH BIO-INSEK. SPRAY ABOUT 10 - 14 DAYS APART
- Add suspension to water of the spray tank or fertigation tank while agitating tank consistently
- Apply early morning or late afternoon
- Water pH 6 - 7
- (optional) Add 1% molasses to contents of the tank as a food source for the fungus
- You can use this in conjunction with BioBoost and iBatech



# BIO-TRICHO

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## **DIRECTIONS AND COVERAGE**

### **SOIL DRENCH**

- Apply as a soil drench to seedbed or seedling trays before planting
- Apply to seed as a seed treatment by mixing seed in a suspension
- Containing a compatible sticker

### **Mixing Ratios**

5ml Bio-Tricho / 1L water / 5m<sup>2</sup>- 10m<sup>2</sup> -----Wet Thoroughly

50ml / 10L water / 50m<sup>2</sup> - 100m<sup>2</sup> -----Wet Thoroughly

100ml Bio Tricho / 100L Water / 500m<sup>2</sup> - 1000m<sup>2</sup> -----Wet thoroughly

### **SOIL TREATMENT**

- If possible through an irrigation system, or else make sure the moisture content of the soil is high (ideal to apply after the rain), apply tank mixture to the soil and irrigate with at least 20mm

### **Mixing Ratios**

- 1L/Ha-----Wet Thoroughly (The water is only the carrier so use a minimum amount of water to cover 1 Hectare)
- Mode of action must be considered for best timing



# BIO-TRICHO

## CROPS

APPLE & PEARS	CHICORY	LUPINS	POTATOES
APRICOTS	CITRUS	MAIZE	POMEGRANATE
AVOCADOS	COFFEE	MANGOES	PRUNES
BANANAS	COTTON	NECTARINES	QUINCES
BARLEY	CRUCIFERAE	OAK TREES	RYE
BEANS	CUCURBITS	OATS	SORGHUM (GRAIN)
BERRIES	FIGS	OLIVES	STRAWBERRIES
BLUEBERRY	GINGER	ONIONS, LEEKS, CHIVES	SUGAR CANE
CASHEW NUT	GRANADILLA	PAPAYA	SUNFLOWERS
CAPSICUM	GRAPES	PECAN NUTS	SWEET CORN
CARROTS	GROUNDNUTS	PEACHES	TOBACO
CELERY	GUAVAS	PEAS	TOMATOES
CHERRIES	HAZELNUT	PEPPERS	WALNUTS
CHICORY	HOPS	PERSIMONS	WHEAT
CITRUS	KIWI FRUIT	PINEAPPLES	
COFFEE	LETTUCE	PLUMS	
CRUCIFERAE-CABBAGE, CAULIFLOWER, BROCCOLI, BRUSSEL SPROUTS			
CURCUBITS-MELONS, SQUASH, CUCUMBERS, PUMPKIN			
BEANS-GREEN BEANS, DRY BEANS, SOY BEANS			
ORNAMENTALS, FLOWERS, LAWNS			

# BIO-TRICHO

## TARGETS DISEASES

Alternaria Spot	Cucumber Wilt	Scab
Black Scurf	Dead-Arm	Silver Scurf
Blossom Blight	Fusarium Dry rot	Stem canker
Boytris rot	Phythium	Stem rot
Brown rot	Phytophthora	Stinking Smut
Calyx-end rot	Pink root	Take all
Common scap	Root rot and Collar rot	White bulb rot
Seed decay, Seedling Disease, Soil Pathogens (damping off, root rot, seed decay and other seed-borne disease)		

# FUNGUS DISEASES

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**Anthracnose**



**Black spot**



**Botrytis leaf spot**



**Botrytis rot**



**Downy mildew**



**Early blight**



**Fruit spot**



**Late blight**





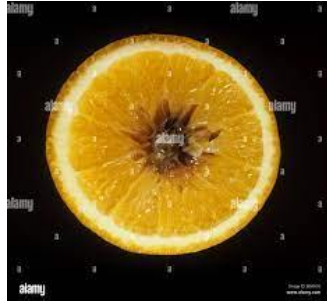
# FUNGUS DISEASES

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**Leaf curl**



**Navel end rot**



**Powdery mildew Purple blotch**



**Rust**




**Dollar Spot Turf Disease**



**Brown Patch Lawn Disease**







**SOIL AMMENDMENTS &  
WATER MANAGEMENT  
SYSTEMS**





**SEED2HARVEST**  
BRINGING GROWTH IN AGRI



Kelp contains micro and macro nutrients and the full range of amino acids. Of the seaweeds, *Ecklonia maxima* has the highest concentration of plant growth stimuli which makes this plant so beneficial. The natural hormones are readily available in the fronds and are easily taken up by land plants. The growth hormones, namely auxins and cytokinin's are present.

Kelp (*Ecklonia maxima*) is an excellent source for building soil fertility, natural pest control and a great supplement for animals which can be added to there feeding programme

Kelp is a highly nutritious supplement that is rich in micronutrients for the support of good health in dogs, cats, horses, sheep, cattle and even poultry. With its high amounts of nutrients, minerals, and vitamins, Kelp is an essential choice when maintaining your animals health.



# BENEFITS OF KELP FLAKES

Ecklonia Maxima contains micro, and macro nutrients, Nitrogen (N), Phosphorus (P) and Potassium (K) and the full range of amino acids. As well as this, natural growth hormones, auxins and cytokinins which are present, are easily taken up by land plants. Kelp Flakes are a great organic amendment to prepare your super soil.

As an application to improve soil quality, Kelp Flakes build up the humus structure of the soil and provides vitamins and micro and macro nutrients as an effective crop feed. It breaks down over time resulting in long lasting plant food for healthier soil and plants.

- Increased nutrient uptake in plants
- Stronger root and leaf growth
- Seed germination
- Higher marketable yields
- Improved soil health
- Increased microbial activity in soil
- Builds up humus
- Slow release plant food
- Provides macro and micro nutrients
- Improved disease and pest resistance
- Improved water retention





# Seed2Harvest Kelp Flake Uses

## Soil Enhancement:

- General Soil Improvement: 300kg-500kg / Ha
- Medium-Large Shrubs and Trees: 150g – 250gram / Plant
- Vegetables and Herbs: 300kg-500kg / Ha or 50gram / m<sup>2</sup> every 4-6 weeks

## Top Dressing

Evenly spread 50g of Kelp Flakes per square meter loosely around the base of the stem and water well

## Transplanting

Mix 10g Kelp Flakes per litre of growing medium

## Animal Feed Supplement

Apply as directed

## Worm Farm Feed Supplement

Apply as directed



**SEED2HARVEST**  
BRINGING GROWTH IN AGRICULTURE





# Seed2Harvest Kelp Flake Uses

## How to make your Kelp Tea Foliar Spray

1. Mix 1kg Kelp flakes into 20 litre non-chlorinated / rain water and leave to brew for 14 days stirring / agitating regularly
2. Strain the kelp tea from the 20L can and pour over to other can and store in a cool dry place.
3. Dilute 30ml of Kelp Tea concentrate / litre water and foliar spray until droplets form on leaves.
4. Remaining Kelp pieces left over in the 20L can be thrown onto your garden bed







**SEED2HARVEST**  
BRINGING GROWTH IN AGRI

Enhancing the growth of the plants



**SEED2HARVEST**

BRINGING GROWTH IN AGRI

**WATER MANAGEMENT SYSTEM**



# WHAT IS HYDROCACHE

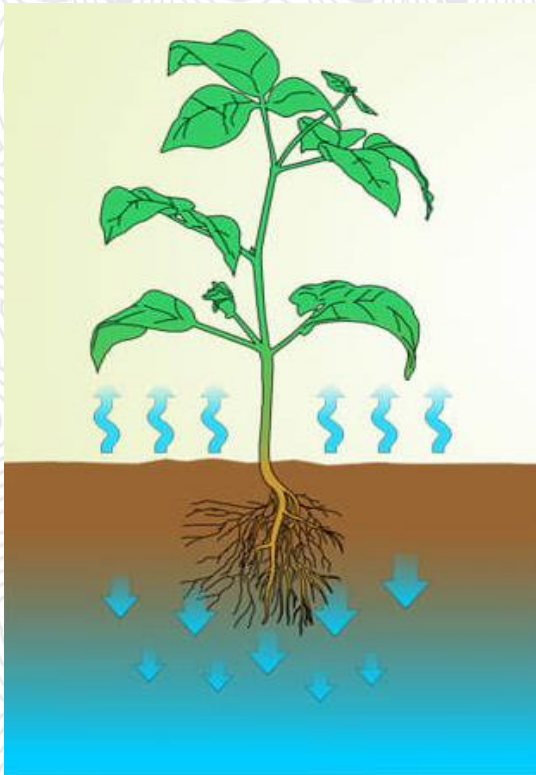
HydroCache is a fine crystal which looks similar to sugar or salt, and turns into a gel-like substance when activated in water. Water is kept in the gel, like a “mini water Reservoir” and is released to the plant, tree or grass at the root where it is needed the most

HydroCache is able to absorb up to 600 times its own weight in water, Water soluble nutrients are not washed away while irrigating as it is stored in the Hydrosorb ready to be absorbed by the plant.



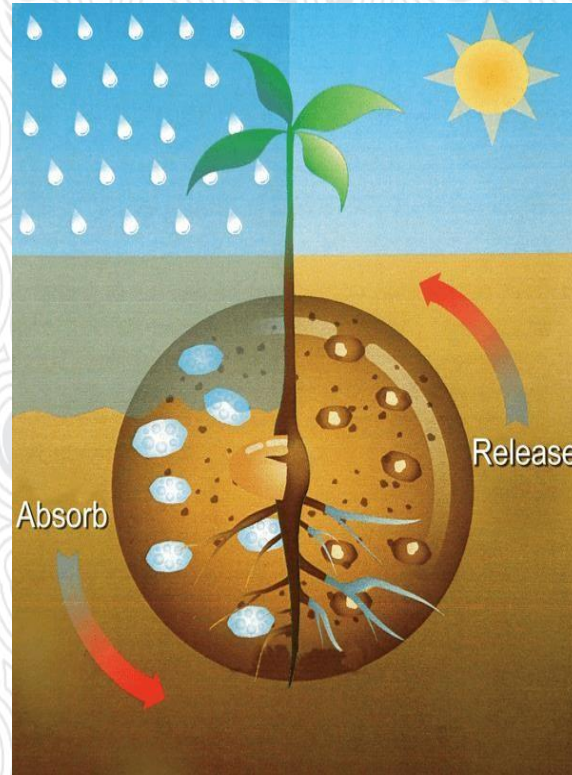


## WITHOUT HYDROCACHE



While water evaporates through the surface of the soil, gravity draws water and nutrients down into the ground past the root system, thus requiring you water more.

## WITH HYDROCACHE



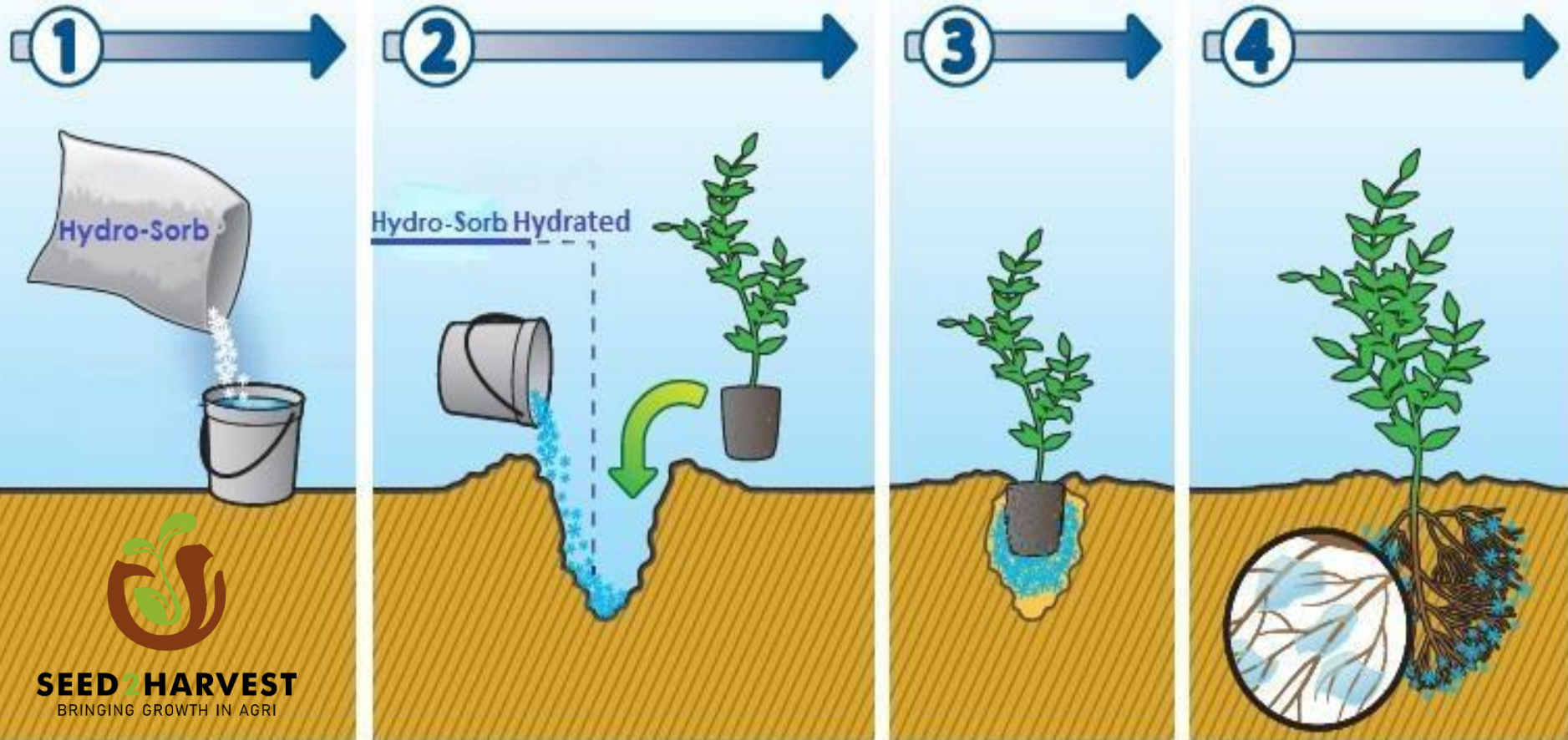
Soil Treated with HydroCache helps to eliminate down leaching as well as evaporation by retaining the water and nutrients around the root system, in turn **stimulating plant growth** and requiring less water



**SEED2HARVEST**  
BRINGING GROWTH IN AGRICULTURE



# HOW TO ACTIVATE HYDROCACHE





# BENEFITS OF HYDROCACHE



SAVES 40-80% WATER



PLANT GROWTH



SEED GERMINATION



SAVES MONEY



REDUCES SHOCK



CONTROLLED  
RELEASE



AERATES THE SOIL



CONTROLS pH  
LEVELS

# WHERE TO USE HYDROCACHE

## Grass

Golf Courses  
Sports Fields  
School playgrounds  
Domestic Gardens

## Agriculture

Subsistence farming  
Plant growers  
Seed germination  
Cotton and Grains

## Trees

Fruit and Nut Orchards  
Vineyards  
Forestry  
Plantations

**Africa** as a continent **struggles with water** and **water supply** in many parts, and these semi-arid and arid areas still have **to produce food** and have **pastures for livestock** and grass areas for **recreation**.





# CARBON<sup>+</sup>



Increase Soil  
Organic Carbon



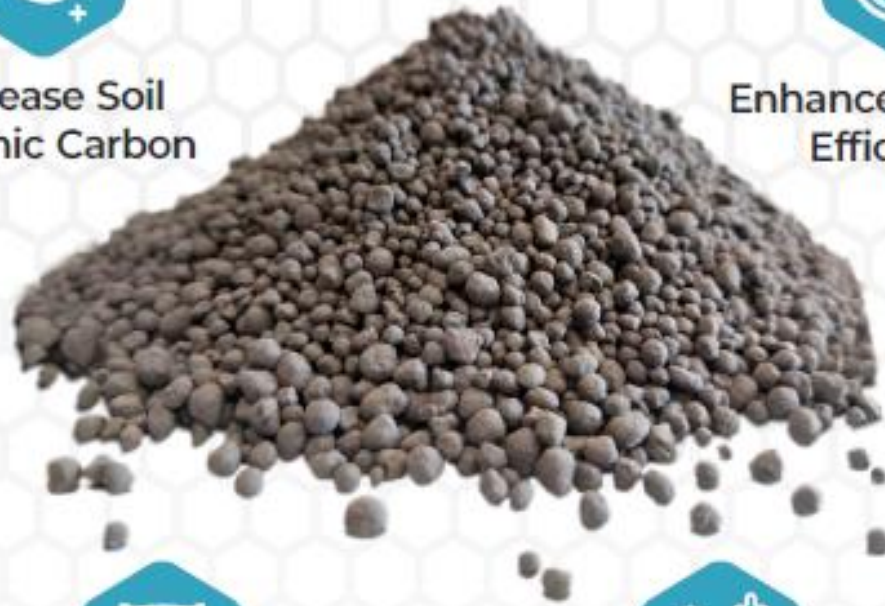
Enhance Fertilizer  
Efficiency



100%  
Organic



Increased  
Yield



Cost  
Effective



Promote  
Plant Growth



Reduce  
Fertilizer Usage



Multi-Beneficial  
Product

# CARBON<sup>+</sup>

- ◊ Carbon+ is produced by burning organic matter under low-oxygen conditions blended with **natural pulverized Ultramafic rock dust** for enhanced weathering Soil amendment:
- ◊ **Carbon+** can significantly increase soil organic carbon levels
- ◊ **Improve soil fertility.**
- ◊ **Carbon+ has a high surface area** and is highly porous and can help to retain water and nutrients in the soil, making them more available to plants.
- ◊ **Carbon+ can increase soil pH**, reducing the need for lime application.
- ◊ **Carbon+** can also **increase root growth, reduce nutrient leaching**, leading to higher yields.
- ◊ **Carbon+ improves soil health and increase crop yields** while reducing the need for synthetic fertilizers and other inputs.



# CARBON<sup>+</sup>

- ◈ **Rich in essential minerals** like **calcium, magnesium, and potassium.**
- ◈ **Carbon sequestration:** Can help capture carbon dioxide from the atmosphere and store it in the soil.
- ◈ **Disease prevention:** Help prevent plant diseases by improving soil health and promoting the growth of beneficial microorganisms.
- ◈ **Improved water retention** - especially beneficial in dry sandy soil with low ph.
- ◈ **Green Space Maintenance:** For your lawns and landscaping, helps maintain healthy turf by improving soil fertility and reducing the need for synthetic fertilizers and pesticides.
- ◈ It can also help **prevent soil compaction**, which can be a common problem on golf courses.

# CARBON<sup>+</sup>

## APPLICATION METHOD:

- Carbon+ can be distributed by hand or can be mixed with granular fertilizer and spread, using a fertilizer spreader.
- Suitable for pot plants, Patio gardens, vegetable and herb gardens, Golf courses, Turf and sports fields.

## APPLICATION RATE

- Carbon+ can be used to replace your fertilizer use by 10% so we recommend that you use a minimum of 10kg -25kg per hectare.
- 10g/m<sup>2</sup> on small gardens

## Grass

Golf Courses  
Sports Fields  
School playgrounds  
Domestic Gardens

## Agriculture

Farming  
Plant growers  
Seedling Mixes  
Cotton and Grains

## Trees

Fruit and Nut Orchards  
Vineyards  
Forestry  
Plantations



**ENVIRONOC® 401**



**ENVIRONOC® 501**



**SEED2HARVEST**  
BRINGING GROWTH IN AGRI





**SEED2HARVEST**  
BRINGING GROWTH IN AGRICULTURE

ENVIRONOC **401** MICROBIAL PLANT BIOSTIMULANT

## Soil Feeding the Plant

## Plant Feeding the Soil



### NITROGEN FIXATION

Several microbes are able to convert freely available atmospheric nitrogen into a plant available form.

### NITROGEN MINERALIZATION

Several microbes are able to convert soil born nitrogen into plant available form. Mining the N currently unavailable within the soil.

### PHOSPHORUS SOLUBILIZATION

Several microbes have the ability to solubilize otherwise insoluble phosphorus and make it available to the plants.

### SURFACTANT PROPERTIES

Several microbes are able to reduce surface tension to free up more organic and inorganic nutrients.

### PLANT GROWTH PROMOTION

Several microbes have the ability to release hormones or hormone-like products that stimulate growth and other developmental activities.

### MICRONUTRIENT AVAILABILITY

Several microbes have the ability to enhance micronutrient availability including siderophore production to help attract iron to the plant.

### DEGRADATION CAPABILITIES

Several microbes have the ability to degrade: cellulose, lignin, chitin, starch and other compounds present in the soil improving soil health.

ENVIRONOC® 401/501

# MICORBIAL TEAM TECHNOLOGY

ENVIRONOC 401 and 501 are proprietary blends of naturally occurring beneficial microorganisms (non-GMO) which are nonpathogenic with proven plant growth promoting capabilities.

## PLANT GROWTH

### SOIL HEALTH

**Microbial Surfactant Production:**

Improves soil quality, water-retention and nutrient-holding capacity

**Degradation Of Complex Organic Polymers:** Cellulose, Lignin, Chitin, Starch, Waxes & Oils  
**Petroleum Hydrocarbon**

**Bioremediation:** Oil, Diesel, Gas, Chemical carrier degradation

**Pesticide & Herbicide**

**Bioremediation:** Specialized remediation capabilities

### NUTRIENT EFFICIENCY

**Phosphate Solubilizing Microbes:** FREES unavailable P for plant uptake

**Ammonifying Microbes:** Converts organic N to ammonia for plant uptake

**Potassium Solubilizing Microbes:** Convert insoluble K into soluble plant available form

**Diazotrophic Microbes:** Nitrogen fixation, converts atmospheric N into ammonia

**Nodulation:** Nodule forming Nitrogen fixing rhizobia

**Siderophore Production:** Iron-chelating compounds which increase plant available Iron

**Sulfur Oxidizing:** Convert insoluble sulfur into plant available form

**Zinc Solubilization:** Solubilizes insoluble forms of Zinc for plant uptake

### STRESS MITIGATION

**Ethylene Reduction:** ACC

Deaminase production, inhibiting Ethylene formation, promoting plant tolerance to stress

**Vitamin / Hormone:** Vitamin production and other compounds which promote plant health and vigor

**Volatile Compounds:** Production of VOCs which promote systematic resistance to stress and plant vigor



SEED2HARVEST  
BROADENING DEPTH IN AGRICULTURE





# ORGANIC GARDEN KITS



# ORGANIC GARDEN STARTER KIT



## KEY BENEFITS:

- Innovative and low cost solution
- Health benefits
- Food security
- Easy to use
- Perfect for container gardening
- Friendly to environment

## WHAT YOU GET:

- Step-by-step growing guide
- Vegetable and herb seed varieties
- Organic plant booster powder
- Soil water saving crystals
- Measuring cup, trigger sprayer, mutton cloth
- Organic fertilizer
- Kelp Flakes

### 3 Months of

- Organic insecticide
- Botanical insecticide
- Organic plant stimulant
- Organic fungicide



# ORGANIC GARDEN BOOSTER PACK

Give your garden a boost, especially food gardens plagued by insects and diseases due to low immune systems and erratic weather patterns.



The **Organic Garden Booster Pack** enables the food gardener to treat and feed their existing vegetable and herb garden the way nature intended



# SEED2HARVEST

BRINGING GROWTH IN AGRICULTURE

[WWW.SEED2HARVEST.CO.ZA](http://WWW.SEED2HARVEST.CO.ZA)

TO PLACE AN ORDER OR FIND  
OUT MORE ABOUT OUR  
PRODUCTS PLEASE CLICK ON  
THE LINK BELOW TO FIND YOUR  
NEAREST AGENT

<https://seed2harvest.co.za/agents/>

