ORGANIC INSECTICIDES	ORGANIC FERTILIZER	ORGANIC BIOSTIMULANTS
ORGANIC FUNGICIDES	SOIL CONDITIONERS	BIOLOGICAL INSECTICIDES

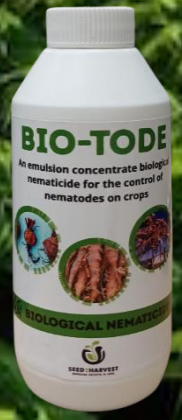
BRINGING GROWTH IN AGRI

SEED2HARVEST

BRINGING GROWTH IN AGRI

We offer **affordable, innovative, and sustainable farming solutions and products**, designed to **increase yields build soil fertility, reduce costs, and improve crop quality** for farmers.

WATER SAVING GEL



SEED 2 HARVEST

BRINGING GROWTH IN AGRI

PRODUCTS	BENEFITS	HOW IT WORKS
	• Improves root development and soil fertility. • Increases nutrient uptake and efficiency. • Enhances plant growth, flowering, and fruit quality. • Boosts crop yields and resilience to stress.	• Stimulates beneficial soil microbes, enhancing soil health and structure. • Delivers bioavailable NPK, micronutrients, amino acids, and peptides directly to the plant.
	• A natural, eco-friendly product • Increases chlorophyll and sugar content of crop thereby improving its yield and quality • Increase Brix • Enhances the natural resistant mechanisms of crops	• Contains natural plant extracts that act like plant hormones or biostimulants, triggering growth and stress tolerance responses in plants
	• Improves soil structure and moisture retention. • Safe for the environment, beneficial insects, and humans. • Promotes stronger root development and plant growth.	• Microbes fix atmospheric nitrogen into forms plants can use, reducing fertilizer needs. • Stimulates natural plant defenses, making crops more resilient to stress and infection.
	• Accelerates the breakdown of organic matter in soil and compost. • Supports sustainable farming by reducing reliance on chemical fertilizers. • Increases moisture retention and aeration in the soil.	• Helps recycle nutrients from post-harvest residues, reducing waste and preparing soil for the next planting. • Enhances soil structure vy increasing organic matter content and microbial biomass,
	• Supplies essential minerals and trace elements to enrich soil fertility. • Improves soil structure, increasing aeration and water retention. • Enhances nutrient holding capacity, reducing nutrient loss through leaching.	• Biochar's porous structure provides shelter and habitat for beneficial microbes and soil organisms. • Rock dust slowly releases minerals that are vital for plant nutrition and microbial metabolism.

SEED2HARVEST

BRINGING GROWTH IN AGRI

PRODUCTS	BENEFITS	HOW IT WORKS
	• Promotes root development and improves nutrient uptake. • Reduces dependence on chemical fungicides. • Improves plant resilience to environmental stress and disease pressure.	• Trichoderma colonizes the root zone, forming a protective barrier around roots. • Competes with harmful fungi for space and nutrients, effectively starving and displacing them.
	• Naturally controls harmful nematodes that damage crop roots • Reduces crop losses caused by nematode infestations. • Non-toxic to humans and animals. • Enhances soil biological activity and fertility.	• Microbes colonize the soil and roots, creating an environment hostile to nematodes. • Helps restore healthy soil microbial balance, reducing nematode damage over time.
	• Reduces reliance on chemical pesticides • Enhances soil microbial activity and resilience • Fast-acting pest control • Long-lasting effect	• Bio-Insek contains natural fungi spores that stick to insect skins. • Fungus multiplies inside the insect, weakening and killing it in 4–10 days
	• Enhances plant health and boosts resistance to stress and diseases. • Helps prevent fungal diseases like powdery mildew and black spot. • Biodegradable and leaves no harmful residues on crops.	• Acts as an insect repellent and feeding deterrent. • Inhibits fungal spore germination and growth on plant surfaces. • Breaks down quickly in sunlight, minimizing environmental impact.
	• Breaks down quickly under UV light; residues do not persist • Targeted pest control • Broad-spectrum, contact insecticide derived from pyrethrins	• It penetrates the spiracles, damaging cell membranes in the cuticle and leading to death. • The formulation is designed to allow partial insect recovery from narcosis, encouraging them to leave hiding places.

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®

A Natural Biostimulant

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 **ºBrix**
- 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





iBATECH®

A Natural Biostimulant

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®

iBATECH®

A Natural Biostimulant

Do you know what chlorophyll can do for you?

Dualex™ readings (2/12/2015) on plum leaves in Grabouw demonstration trial after 3rd 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®))

iBATECH®

A Natural Biostimulant

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®

iBATECH® applications improved the nitrogen uptake (NBI®), 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

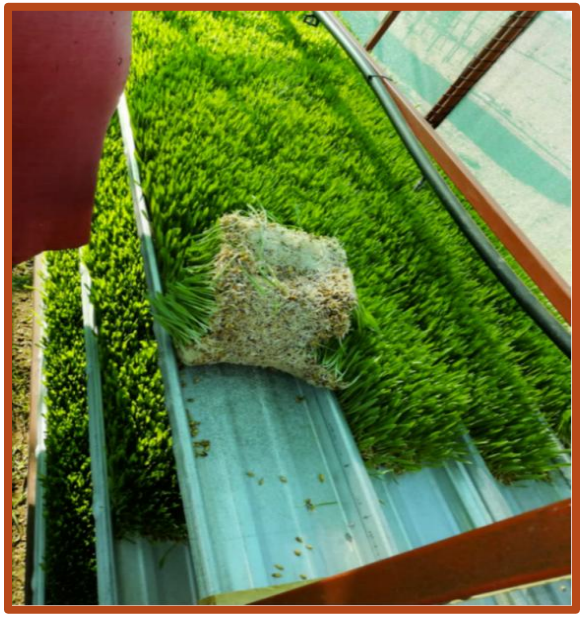
PROBLEM

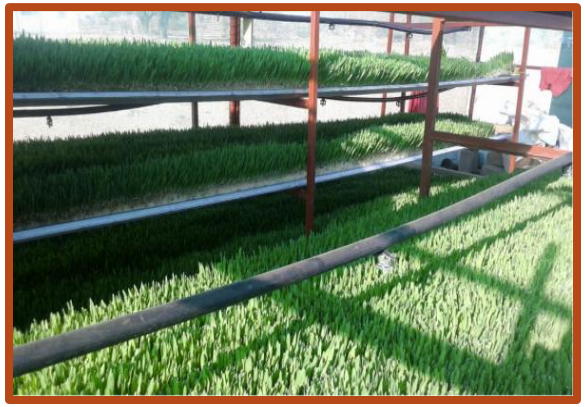
He experienced germination and growth problems with hydroponic barley sprouts, for livestock feed

RESULTS AFTER APPLYING iBATECH

iBATECH® application improved the germination and growth of the barley sprouts.

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





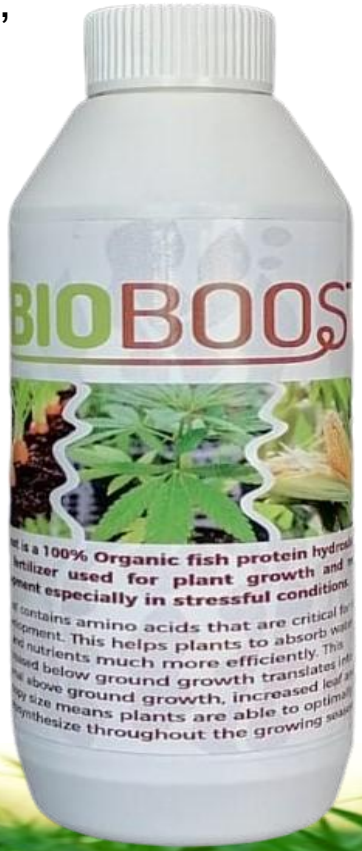
iBATECH®
A Natural Biostimulant

BIOBOOST

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



BIOBOOST

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

BIOBOOST

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 +-1500m2
- Good for the environment… the birds and the bees LOVE IT, because its NATURAL

BIOBOOST

WHAT ARE THE BENFITS 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**

BIOBOOST

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

BIOBOOST

FARMER TESTIMONMIAL

Farmer Laphahang – Maseru – Lesotho – December 2022

Tomatoes –10 weeks and harvesting

Cucumbers – 10 weeks and harvesting

First Harvest


INSECT CONTROL

BIO-NEEM

Reg.No. L7052 (Act 36 of 1947)T

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 5m² - 10m²
- 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			
CURCURBITS-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 wooly 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

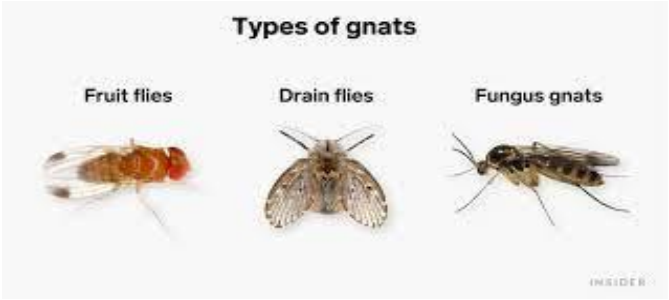
CMR beetles

Cutworms

False chinch bug

Flat mites

Fruit flies



Fruit nibbler

Greater cabbage moth

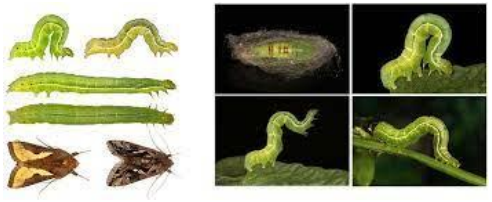
INSECTS

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 5m² - 10m²
- 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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EXTERMINATOR

CROPS

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Mealy bugs

Orange dog caterpillars

Oriental fruit moth

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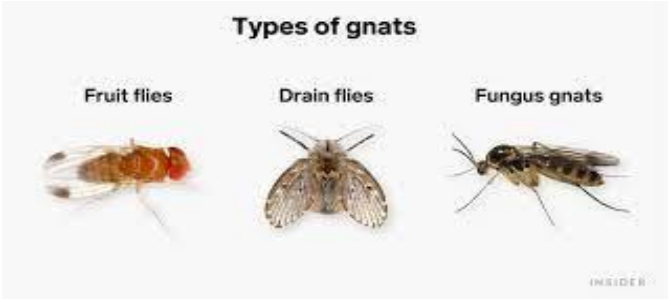


Fruit nibbler

Greater cabbage moth

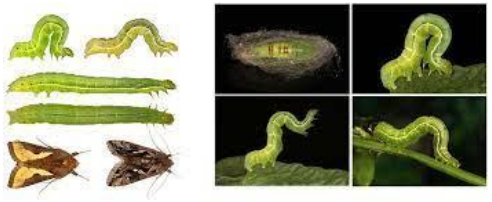
INSECTS

Grey mite

Ground weevil

Red spider mite

Semi-looper



Spiny bollworms

Stainers

Syagrus beetle

Thrips

Tree crickets

Tuber moth

BIO-INSEK

Reg.No. L8466 (Act 36 of 1947)

WHAT IS BIO-INSEK

Bio-Insek is a suspension concentrate biological insecticide for the control of adult insects, their larvae and pupae (not sealed coccoons) 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

Reg.No. L8466 (Act 36 of 1947)

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 multiples in the haemocoel as a blastospora, 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

Reg.No. L8466 (Act 36 of 1947)

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

Reg.No. L8466 (Act 36 of 1947)

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-INSEK

Reg.No. L8466 (Act 36 of 1947)

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			
CURCURBITS-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 wooly 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

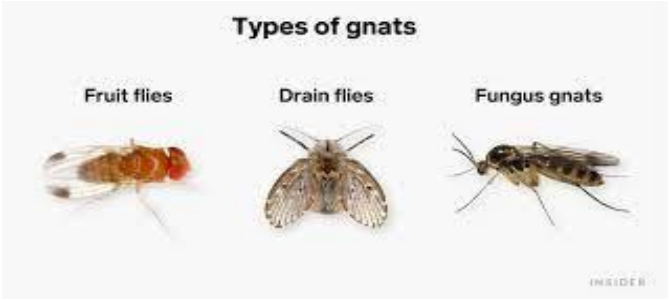
CMR beetles

Cutworms

False chinch bug

Flat mites

Fruit flies



Fruit nibbler

Greater cabbage moth

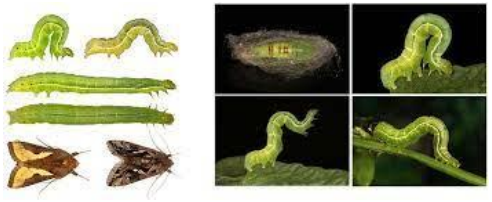
INSECTS

Grey mite

Ground weevil

Red spider mite

Semi-looper



Spiny bollworms

Stainers

Syagrus beetle

Thrips

Tree crickets

Tuber moth

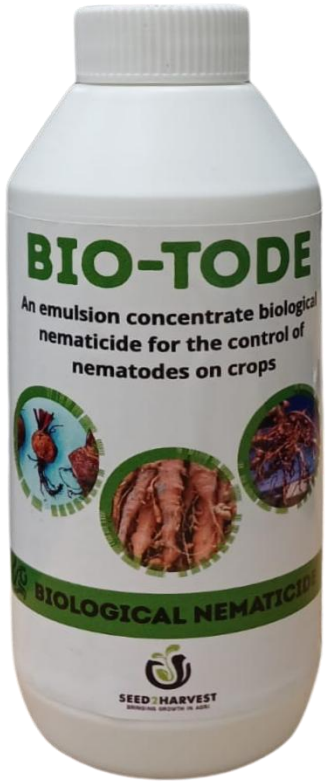
BIO-TODE

WHAT IS BIO-TODE

A biological nematicide for the control of nematodes

MODE OF ACTION

Paecilomyces Lilacinus is an opportunistic fungus and saprophyte, its survival not dependent on its host and growth is enhanced in the rhizosphere. Oviparasitic (containing well formed juveniles and earlier eggs), and endoparasitic to various growth stages of nematodes. Penetration of egg-shells involving both physical forces and chemical action: *Paecilomyces lilacinus* produces a serine protease, cell wall lytic enzymes and lipase.



Enzymes could break down eggshell by attacking the protein layer itself, proteins that cross link the chitin layer, the eggshell lipids or chitin, to enable a narrow infection peg to push through. Pressure is involved in infection. Once an egg is infected the nutrients available for the fungus stimulate proliferation of the hyphae on that egg, enabling subsequent growth to adjacent eggs. Occasionally, the fungus parasitizes egg laying females by penetration through anal or vulval opening destroying eggs
before laying process.

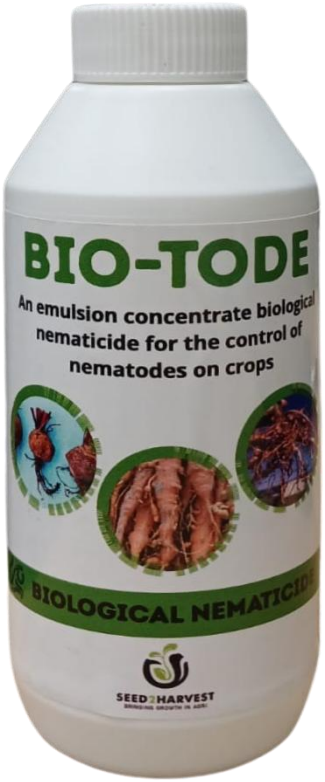
BIO-TODE

WHAT ARE NEMATODES

Soil is an excellent habitat for nematodes, and 100 cc of soil may contain several thousand of them. Because of their importance to agriculture, much more is known about plant-parasitic nematodes than about the other kinds of nematodes which are present in soil. Most kinds of soil nematodes do not parasitize plants, but are beneficial in the decomposition of organic matter. These nematodes are often referred to as free-living nematodes. Juvenile or other stages of animal and insect parasites may also be found in soil. Although some plant parasites may live within plant roots; most nematodes inhabit the thin film of moisture around soil particles.

The rhizosphere soil around small plant roots and root hairs is a particularly rich habitat for many kinds of nematodes.

There is a direct link between decreasing edaphon (soil life, soil biota) and increasing nematode threat!



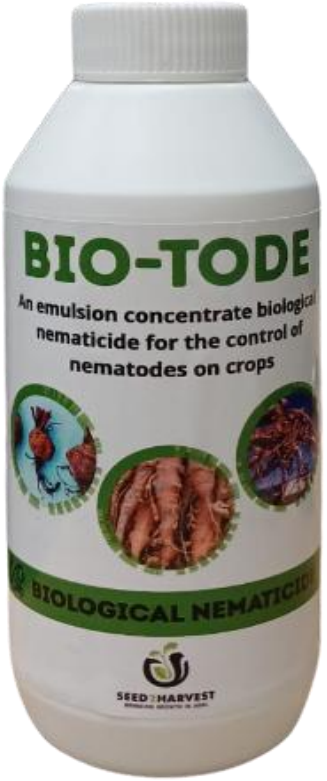
BIO-TODE

REDUCING TOTAL NUMBER OF NEMATODES

- **Bio-Tode:** Spores of the fungus *Paecelomyces lilacinus,* a saprophytic fungi growing on dead plant materials and present in healthy rhizospheres.
- **Bio-Insek:** Spores of the fungus *Beauveria bassiana,* a saprophytic fungi growing on dead plant materials.
- **Bio-Neem:** Neem oil has a history suppressing nematodes for limited periods and will increase the peak effect.

INCREASING ROOT GROWTH

- **BioBoost:** Keeping track of plant sap Brix is very important. (Measure!!!!!)
- Correct moisture content of soil is a very important factor reducing nematode challenges. (Measure!!!!!!)
- **Bio-Tricho:** Only 14 days after application of Bio-Tode and or Bio-Insek apply Bio-Tricho to limit damage (vector disease) by nematodes to roots.



BIO-TODE

APPLICATION

Bio-Tode can be applied directly into the planting furrow during planting or washed into the soil with the irrigation water (drip lines). During vegetative growth it should be applied close to the stem.

SOIL TREATMENT

- If possible, through an irrigation system, or else make sure the moisture content of the 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)
- USE IN CONJUNCTION WITH BIO-INSEK AND BIO-NEEM

Mode of action must be considered for best timing

DOSAGE

Apply 1L each of Bio-Tode and 1L of Bio-Insek and 2 litres of Bio-Neem per hectare. Use clean water pH 6.5 – 7

BIO-TODE

PESTICIDE INFORMATION PROFILE

Active(s): *Paecilomyces lilacinus* strain sf

Toxicity: PAN Bad Actor Chemical: No

HEALTH RISKS HUMAN
Acute: None
Chronic: None
Carcenogenisis: No
Cholinesterate inhibitor: No

ENVIRONMENTAL IMPACT
General: Naturally occurring fungus, not infective for mammals and birds.
Bees: No
Fish: No
Groundwater: No

Minimal Risk Levels (MRLs)
Soil application with no risk to tubers and onions


DISEASE CONTROL

BIO-TRICHO

WHAT IS BIO-TRICHO

Bio-Tricho is a biological fungicide consisting of philosphere 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 overgrow pathogenic fungi and paratizes them.
- The Trichoderma harzianum will flourish in organic media and assist breaking these down.
- Trichoderma harzianum will follow root growth giving protection against various soil borne diseases.

BIO-TRICHO

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

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 /5m²- 10m² ----------Wet Thoroughly

50ml / 10L water / 50m² - 100m² ----------Wet Thoroughly

100ml Bio Tricho / 100L Water / 500m² - 1000m² -----Wet thoroughly

SOIL TREATMENT

- If possible through an irrigation system, or else make sure the moisture content of the 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
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CURCURBITS-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	Phytophtora	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

Anthracnose

Black spot

Botrytis leaf spot

Botrytis rot

Downy mildew

Early blight

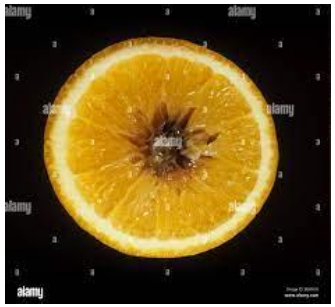
Fruit spot

Late blight

FUNGUS DISEASES

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:

a. General Soil Improvement: 300kg-500kg / Ha
b. Medium-Large Shrubs and Trees: 150g – 250gram / Plant
c. Vegetables and Herbs: 300kg-500kg / Ha or 50gram / m2 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 AGRI

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

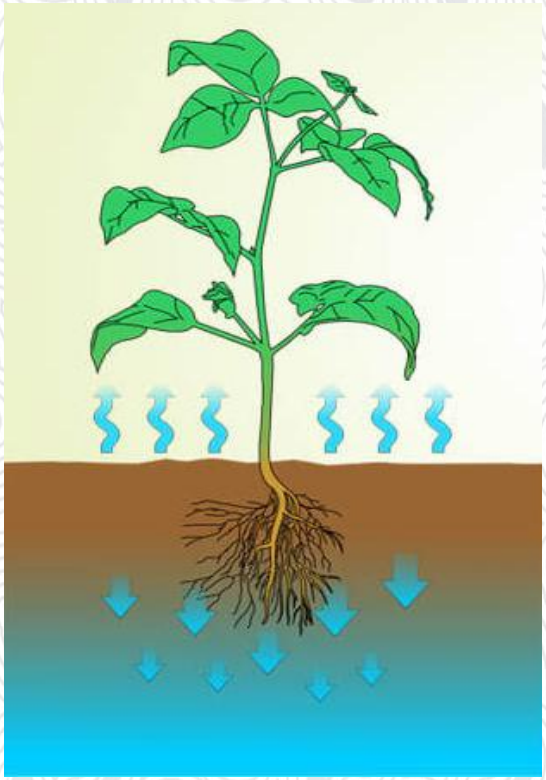

SEED2HARVEST
BRINGING GROWTH IN AGRI
WATER MANAGEMENT SYSTEM

WHAT IS HYDROCACHE

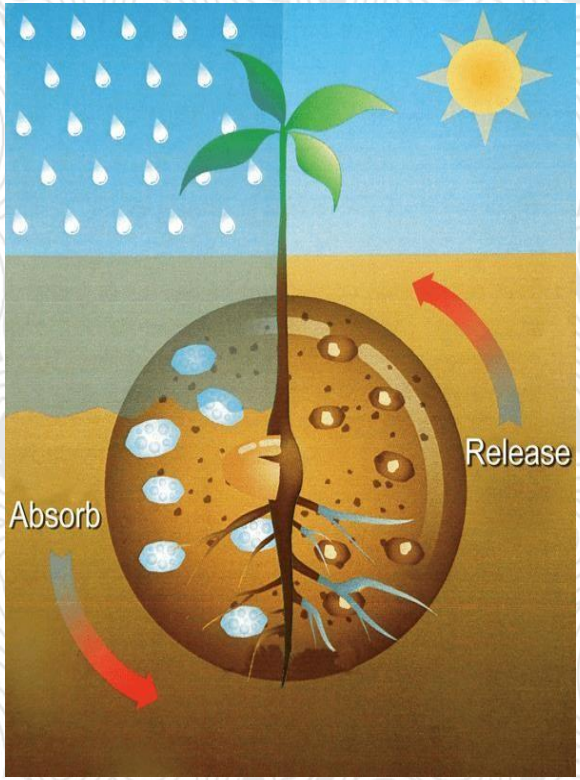
HydroCache is a fine crystal which looks similar to sugar or salt, and turns into a gel-like substance when activated in water. Water is kept in the gel, like a "mini water Reservoir" and is released to the plant, tree or grass at the root where it is needed the most

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

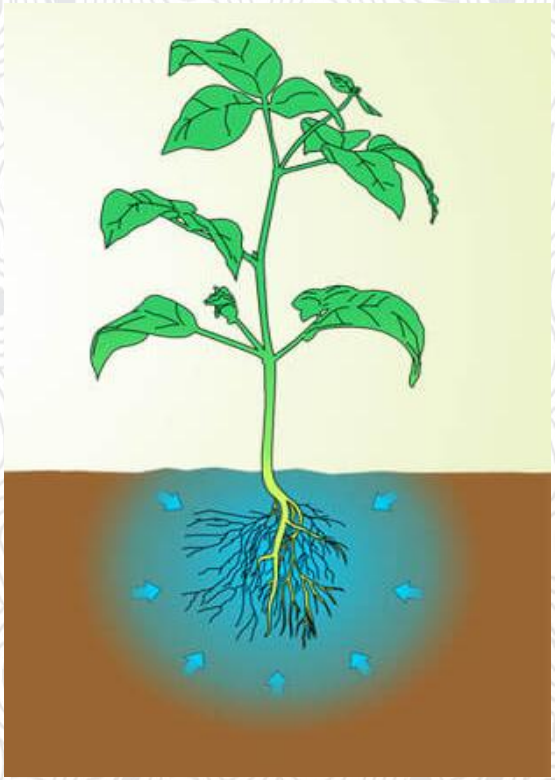


While water evaporates through the surface of the soil, gravity draws water and nutrients down into the ground past the root system, thus requiring you water more.



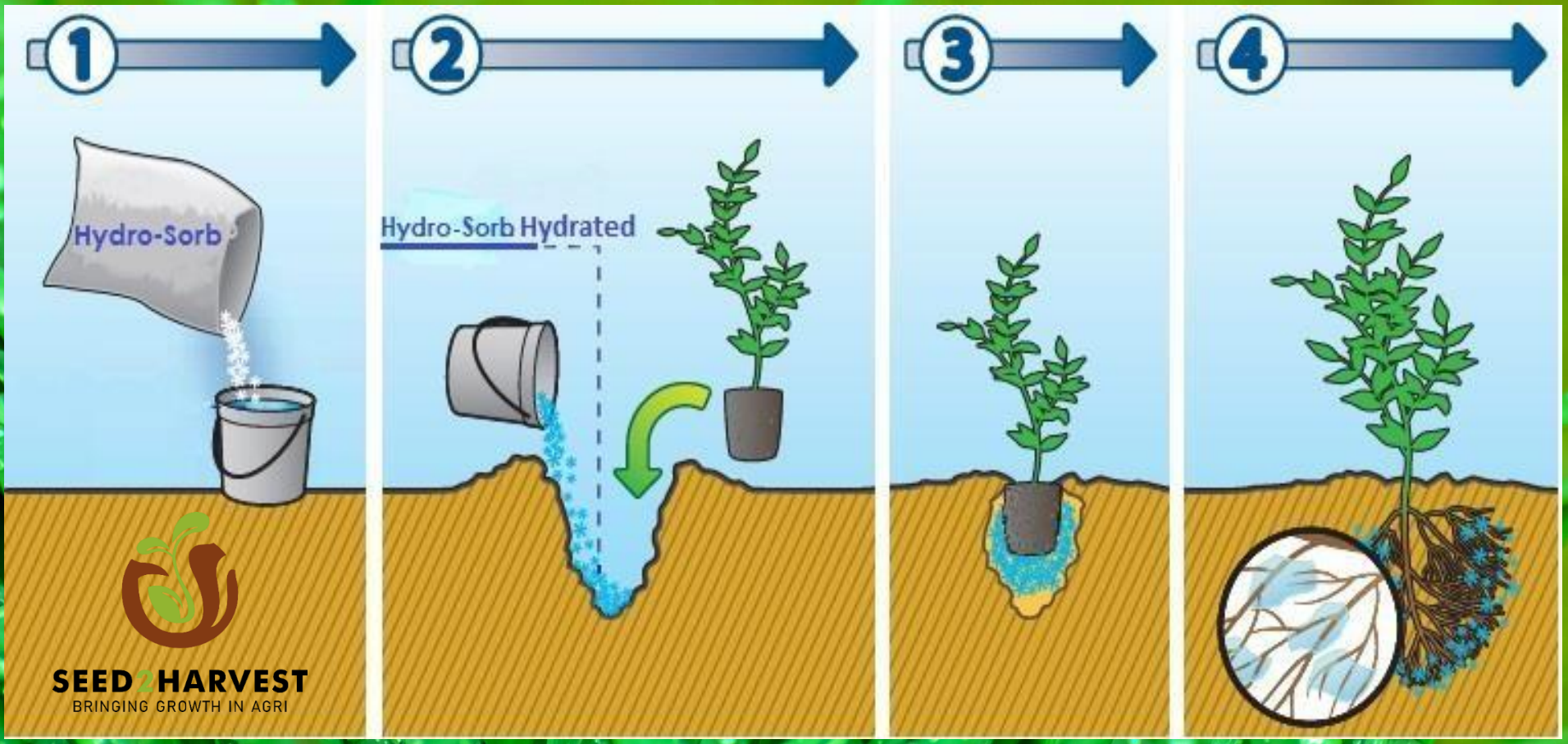
SEED2HARVEST
BRINGING GROWTH IN AGRI

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

HOW TO ACTIVATE HYDROCACHE



SEED2HARVEST
BRINGING GROWTH IN AGRI

BENEFITS OF HYDROCACHE

SAVES 40-80% WATER

PLANT GROWTH

SEED GERMINATION

SAVES MONEY

REDUCES SHOCK

CONTROLLED RELEASE

AERATES THE SOIL

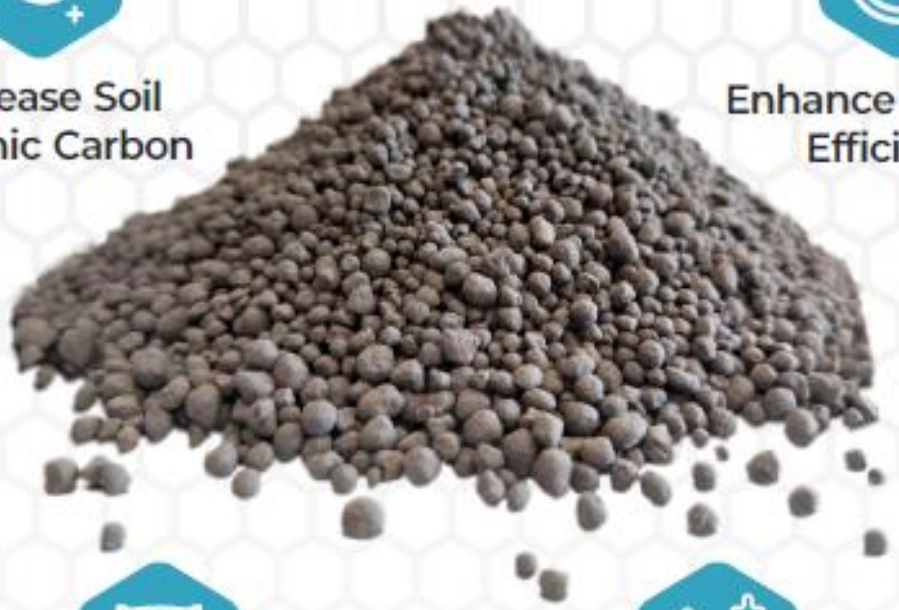
CONTROLS pH LEVELS

WHERE TO USE HYDROCACHE

Grass	Agriculture	Trees
Golf Courses	Subsistence farming	Fruit and Nut Orchards
Sports Fields	Plant growers	Vineyards
School playgrounds	Seed germination	Forestry
Domestic Gardens	Cotton and Grains	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+



Increase Soil Organic Carbon

Enhance Fertilizer Efficiency

Increased Yield

100% Organic

Cost Effective

Promote Plant Growth

Reduce Fertilizer Usage

Multi-Beneficial Product

CARBON+

- 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+

- **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+

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 u use a minimum of 10kg -25kg per hectare.
- 10g/m2 on small gardens

Grass	Agriculture	Trees
Golf Courses	Farming	Fruit and Nut Orchards
Sports Fields	Plant growers	Vineyards
School playgrounds	Seedling Mixes	Forestry
Domestic Gardens	Cotton and Grains	Plantations


ENVIRONOC® 401
ENVIRONOC® 501
SEED2HARVEST
BRINGING GROWTH IN AGRI

SEED2HARVEST
BRINGING GROWTH IN AGRI

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


GARDEN STARTER 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

MITHRA

Seed 2 Harvest is addressing the pressing issues of modern agriculture in a simple and effective way -water shortage, extreme weather conditions, overuse of chemicals, soil health and degradation



Mithra prevents the ground next to the plant from over-heating during the day. Irrigation water and rain water is channelled directly to the plant. The weeds don't grow around the plant, reducing the maintenance and keeping the water for the harvest.

NATURE AND MITHRA SYNERGIES

Mithras part	Nature Part	Agronomic Function
Saving water	Rain, Dew, Gravity	M-shaped Mitra surface creates a large catchment area and funnels rain, dew, or drip-irrigation water straight into the root zone
Saving water	Evaporation, Condensation	Moisture rising from the soil condenses under the surface, reducing loss by evaporation, and returning water to the root zone
Moderating effects of cold, frost & heatwaves	Insulation	The area around the plant is covered and protected, helping temper extreme weather conditions.
Promoting Plant Growth	Photosynthesis, Light Reflection	The Mitra's special surface reflects sunlight towards the shaded side of plants, encouraging/speeding up growth. This effect also helps keep harmful insects away.

NATURE AND MITHRA SYNERGIES

Mithra part	Nature Part	Agronomic Function
No weeds No Herbicides Saving on Labour	Effects of Light/Dark Colour	Engineered layers block sunlight/photosynthesis around the plant base, preventing weeds from growing and competing over resources. The result is a reduced need of toxic glyphosate and other herbicides
Preventing Soil Degradation	Synergy between Water and Soil	Eliminating herbicides and reducing fertilizer use preserves soil quality, fostering an ideal environment for micro biodiversity.
Soil Aeration and soil productivity	Evaporation, Condensation	Free water flow, evaporation and condensation allow for a better aired atmosphere
Preventing Soil Salinization	Permeation	Surface design minimizes damaging build-up of salt in the soil, typical of traditional irrigation.

MITHRA BENEFITS

The size of the Mithra Tray currently in production is 72x55cm, and is relevant foe all young tree including all citrus trees, grapes, avocado, olive and more.

THE BENEFITS

- Cost Saving.
- Water Saving on average 50% less is needed.
- Up to 30% saving in fertilizer consumption.
- Reduced labour cost as the product does not allow sun light to penetrate through the covering.
- Kills off germination weed.
- Dramatically higher crop yield.
- Significantly improve yield.
- Prevent crop loss to extreme weather conditions.
- Water Efficiency.
- Replaces use of harmful plastic mulch.
- Trays are 100% recyclable.





Lettuce Connect

South Africa

Shaun Cairns

+27 71 738 9600

Info@seed2harvest.co.za

Namibia

Leonard Pienaar

+264 81 375 9918

Info.namibia@seed2harvest.co.za

Lesotho

Jeremane Jockey

+266 62 06 0764

Mapalesa Mothoko

+266 58 56 4688

Info.lesotho@seed2harvest.co.za

Zambia

Angela Bwembya

+260 962 45 5187

Seth McAngelo

+260 968 99 2877

Info.zambia@seed2harvest.co.za