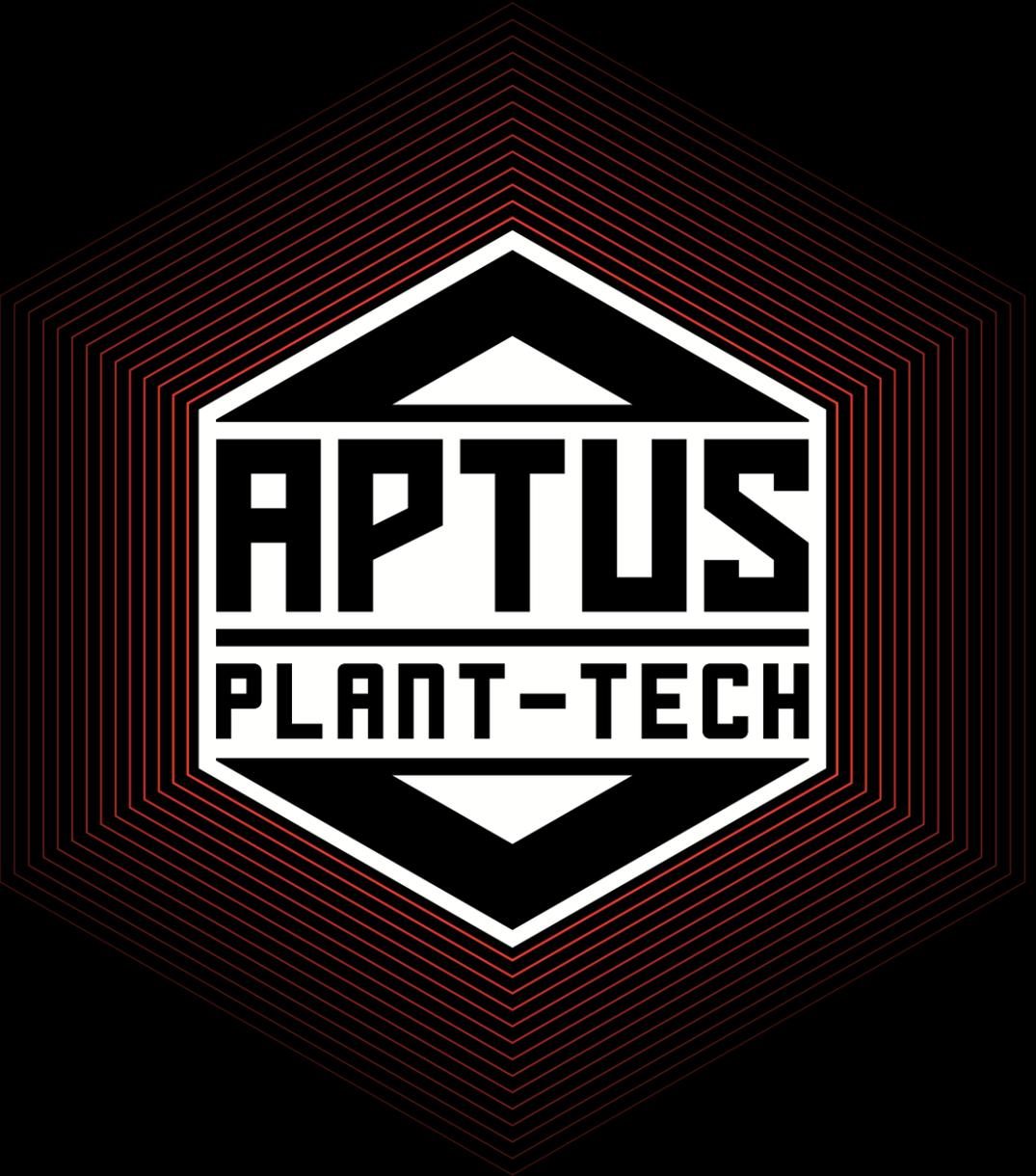


APTUS
PLANT-TECH

CONNECT WITH APTUS

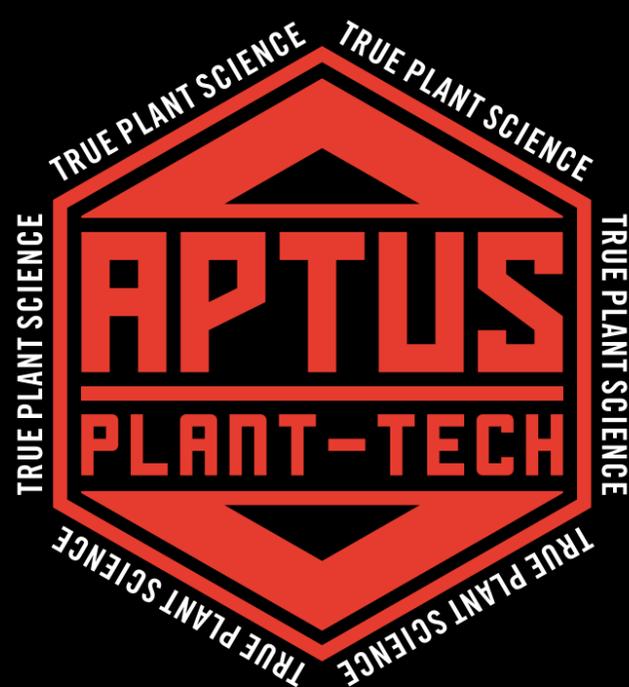
At APTUS Plant-Tech, we are driven to create a community of successful growers from all over the world.

To join the network or to learn more about how APTUS Plant-Tech can help you achieve your full growing potential, follow the links below.



TRUE PLANT SCIENCE MMXXII

SUCCESS BEGINS WITH EDUCATION



www.apтусplanttech.com.au

APTUS EDUCATION

1. The right nutrition, in the right amounts, at the right time
2. Respecting the stages in plant development
3. Understanding nutrient antagonism
4. Biochemical sequencing of nutrients

APTUS PHILOSOPHY

We strive for excellence in everything we do. This applies to products, client service and quality of our public image and beliefs. Our three core-brand pillars are:

Education – Everything we do begins with proper education. We focus on maximising a plant's genetic potential through natural, science-based nutrition technologies. Our chief desire is to create a community of growers who understand why they achieve great quality and yields.

Quality – We are constantly vigilant of the quality of our ingredients, distribution channels, and staff. Growers can be confident that their plants receive no synthetic or harmful materials from APTUS products - only natural nutrition.

Value – All our products are designed to maximise the end user's value experience. The high concentrations of our nutrient formulas mean low per use cost and minimal waste. Growers typically achieve better quality and higher yields for far less cost.

APTUS NUTRITION TECHNOLOGIES

APTUS APPROACH

The 'APTUS Approach' is to provide quality uniform products and education that enhance growers' production and cultivation. The APTUS Approach is based on a preventive methodology for host (plant), pest and environmental problems. Simply put, to avoid problems before they become problems.

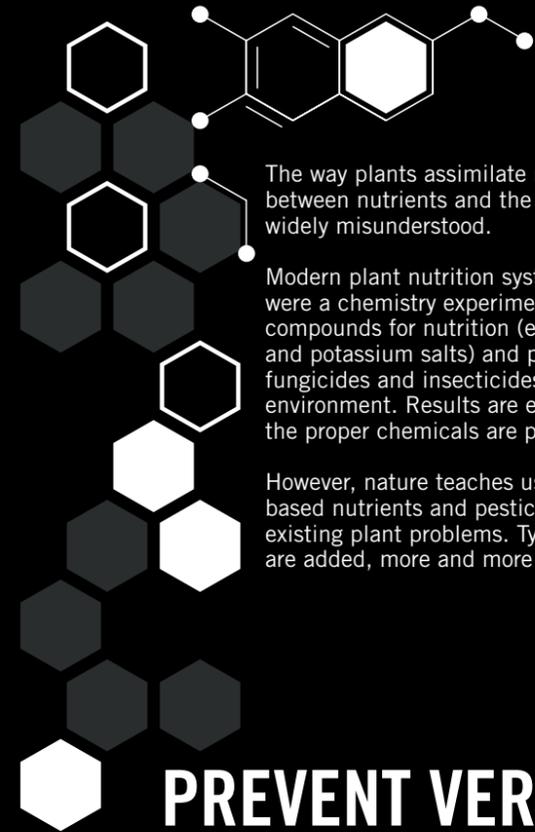
The 'APTUS Approach' is the natural way; it respects fully the rules of nature and is a guideline to get back to ancient natural mechanisms: soil care and plant care. APTUS is the combination of soil bioremediation, plant stimulation and proper nutrition.

**SILICIC ACID
PLUS MICRO-ELEMENTS**

**L-AMINO ACIDS
PLUS NUTRIENTS**

**TARGETED
NUTRITION
PLUS ANTAGONISM
PREVENTION**

TRUE PLANT NUTRITION



The way plants assimilate nutrients, the interactions between nutrients and the bioavailability of nutrients are widely misunderstood.

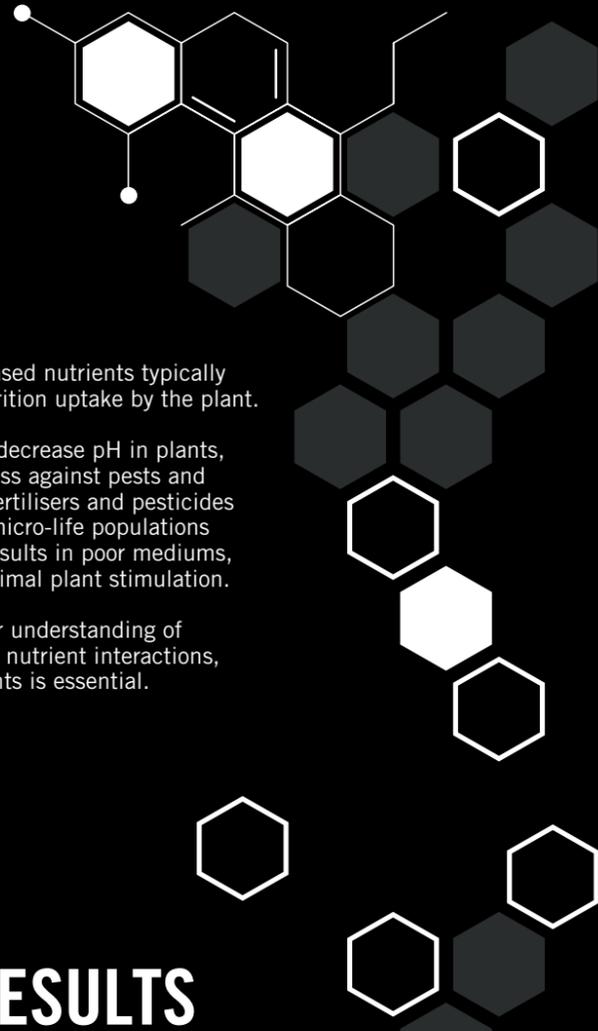
Modern plant nutrition systems are managed as if they were a chemistry experiment. All kinds of chemical compounds for nutrition (especially nitrogen, phosphorus and potassium salts) and protection (pesticides, fungicides and insecticides) are released in the plant's environment. Results are expected simply because all the proper chemicals are present.

However, nature teaches us that the use of chemical-based nutrients and pesticides is not enough to solve existing plant problems. Typically, as more chemicals are added, more and more problems are created.

This is because chemical-based nutrients typically create imbalance in the nutrition uptake by the plant.

Chemical fertilisers tend to decrease pH in plants, which induces plant weakness against pests and fungal diseases. Chemical fertilisers and pesticides also significantly decrease micro-life populations in the grow medium. This results in poor mediums, poor mineralisation and minimal plant stimulation.

To fix these problems, better understanding of nutrient uptake sequencing, nutrient interactions, and bioavailability of nutrients is essential.



1. Feed at the right time, in the right amount, in the right form.
2. Nature desires balance and moderation.
3. Imbalanced feeding from fertiliser 'cocktail' recipes creates unknown problems in the growing medium.

STAGES IN PLANT DEVELOPMENT

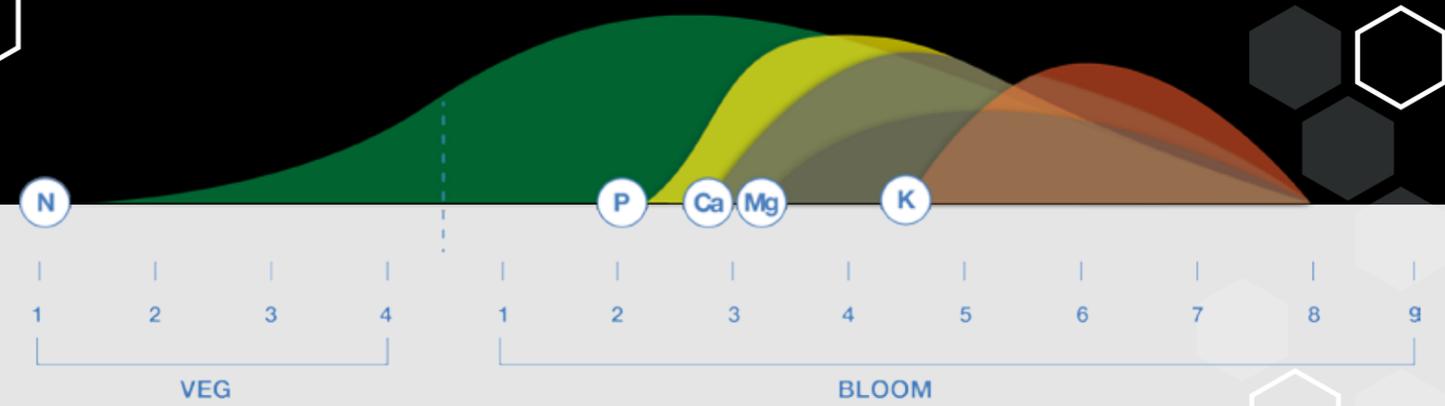
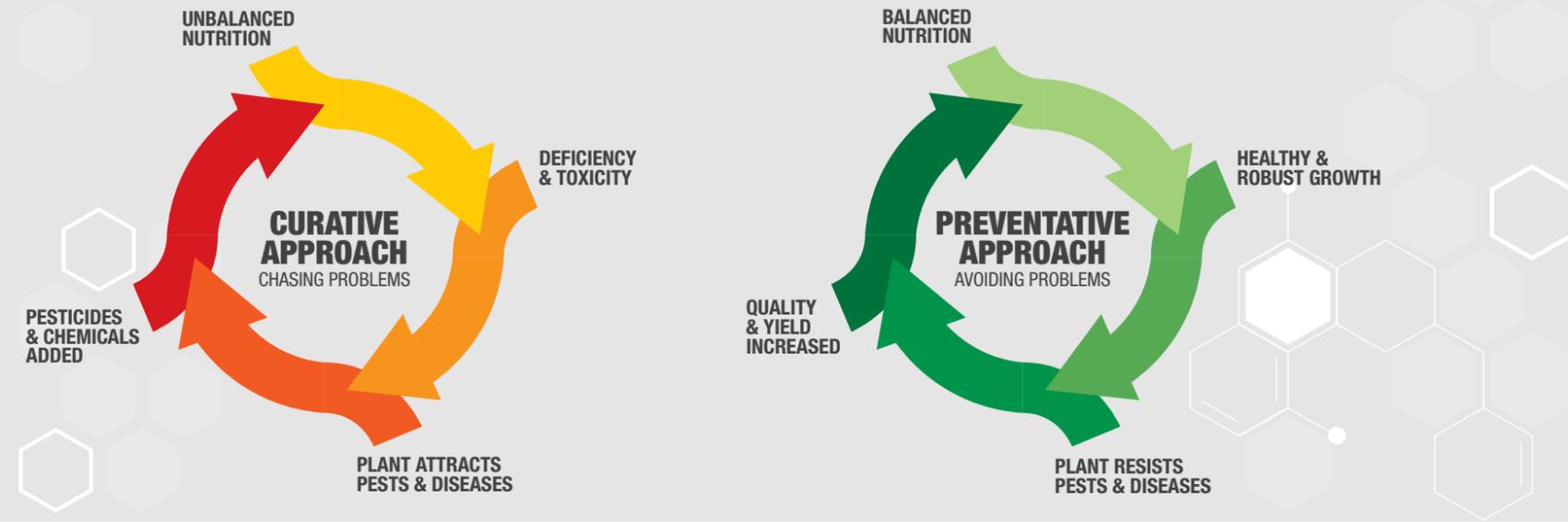
Plants have different and distinct development stages. The primary stages are rooting, vegetative and flowering. These can be broken into more specific stages: rooting, growing, shooting, blooming, fruit or flower development and maturation. Each stage requires a specific balance of nutrition and mineral uptake for maximum production.

Many growers supplement with growth 'boosters' at the wrong development stage when the plant cannot utilise the nutrient.

These unused minerals precipitate in the growing medium interacting with micro-life and other minerals, many times causing deficiencies and lockout.

Every plant is slightly different as well. The nutritional needs of a leafy green plant like spinach is far different than an apple tree. Often growers look for a 'silver bullet' product that will solve all their problems. In nature, there **IS NO SILVER BULLET**.

PREVENT VERSUS CURE = BETTER RESULTS



A COMMON MISTAKE THAT CAN HURT YIELDS

Many growers add a phosphorus and potassium (P/K) Booster during all or most of the bloom phase. This can create significant problems with nutrient uptake that decrease yield and quality. Most plants only need small amounts of potassium during growth and early bloom. potassium is mostly needed during the ripening and maturation stages (late bloom).

Excess unused potassium in the growing medium can 'push' away nitrogen, calcium and magnesium. These are some of the most common deficiencies. Growers can avoid these issues by respecting the natural laws and providing the right balance of nutrients at the proper development stage.

NUTRIENT ANTAGONISM

It is very important to understand how certain nutrients react with each other. If you don't understand these interactions, you may over-supplement with a specific nutrient in an attempt to correct a deficiency.

Not all deficiencies are caused by a lack of nutrients! For example, calcium deficiency may be diagnosed due to low calcium levels OR because there are high levels of nitrates (NO₃). Nitrates 'push' calcium away and can block absorption.

So you should use organic nitrogen instead of inorganic nitrogen, which is high in nitrates. Many modern synthetic fertilisers contain primarily nitrates or other salt-based forms of nitrogen.

Fertiliser salts are the most common cause of tip burn, nutrient antagonism and weak plant growth.

The antagonistic action of nutrients shows how overdoses of certain elements can lock out or displace another element. This list shows which elements react with each other. Understanding nutrient antagonism makes diagnosing deficiencies and toxicity more difficult, but ultimately more accurate.

ELEMENT IN EXCESS	NUTRIENTS USUALLY AFFECTED
nitrogen	potassium, calcium
potassium	nitrogen, calcium, magnesium
phosphorus	zinc, iron, copper
calcium	boron, magnesium, phosphorus
magnesium	calcium, potassium
iron	manganese
manganese	iron, molybdenum, magnesium
copper	molybdenum, iron, manganese, zinc
zinc	iron, manganese
molybdenum	copper, iron
sodium	potassium, calcium, magnesium
aluminium	phosphorus
ammonium Ion	calcium, copper
sulphur	molybdenum

Use this chart as a reference guide to find the true problem when your plants show signs of mineral deficiencies or toxicities.

If phosphorus is in excess it brings in more nitrogen to the plant, unbalancing the nutrition. At the same time it also limits zinc, iron and copper. Optimum nutrition is achieved by balancing the nutrients in the medium.

These problems often arise when growers attempt to create their own 'custom' nutrient recipe from multiple product lines from different companies. Unless a grower is highly scientific, this practice results in overdose and deficiency of specific nutrients.

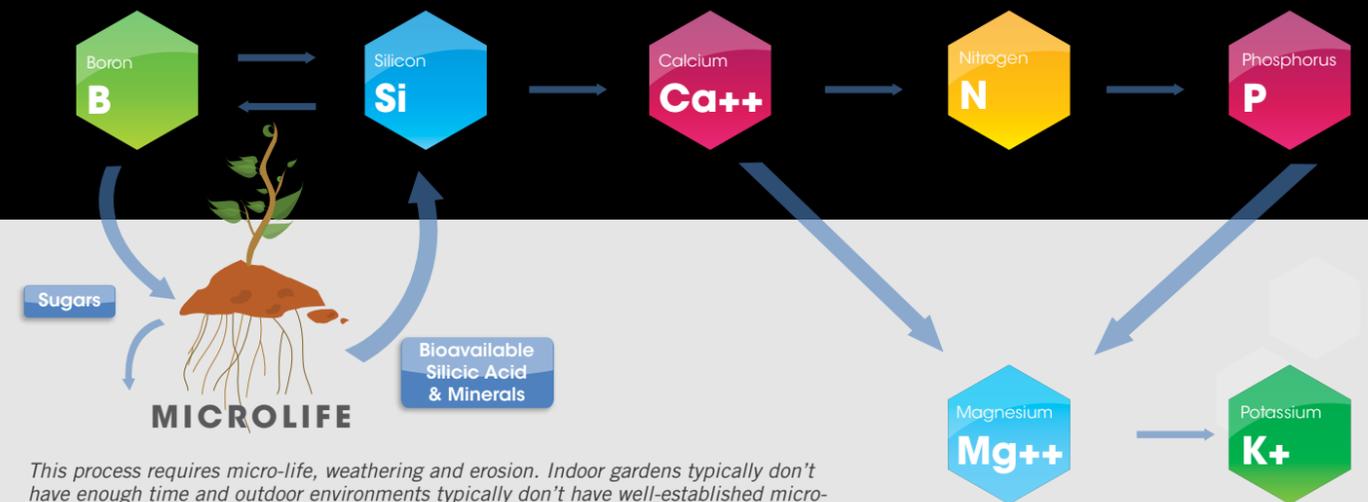
The plants get into wild swings of deficiencies and lockout that result in decreased yield and quality. By using a balanced, high-quality, specifically formulated nutrition system, plants can maximise their genetic potential.

1. Understanding antagonistic action of nutrients helps to more accurately diagnose and prevent problems.
2. Most nutrients usually work together, but this is not always the case. If you break the beginning of a sequence, the rest will be broken. Fix the beginning and the rest falls into place.
3. When you have a problem, start at the beginning.
4. APTUS uses three natural core technologies designed to prevent problems by optimising bioavailability and transport.

BIOCHEMICAL SEQUENCING

It is important to understand that plants have a defined biological sequence of nutrient uptake. This starts with boron, which actively works to move sugars throughout the plant at sites of new growth. At these new growth sites within the root zone, the plant leaches sugars into the medium. These sugars feed the microbes, which,

with the help of weathering, transform silicates (Si) into bioavailable silicic acid through a process called silicification. Silicic acid adjusts the plants' intake of calcium, nitrogen, magnesium, phosphorus and potassium.



This process requires micro-life, weathering and erosion. Indoor gardens typically don't have enough time and outdoor environments typically don't have well-established micro-life for consistent conversion. Supplementation is necessary for maximum production.

A common nutrient problem in indoor gardening is calcium deficiency. This is because calcium interacts with many other minerals commonly used in fertiliser regimens. In addition, antagonism towards calcium is common with excess nitrogen, potassium and ammonium-based compounds.

Looking at the chart above we can see that calcium is near the beginning of the sequence.

If calcium uptake is limited in any way then all other nutrients uptake and availability will be affected. There are many other problems with calcium deficiency that will be discussed later.

One of the best ways to increase calcium availability and uptake (other than chelating with amino acids) is to optimise silicon levels in the form of silicic acid.

L-AMINO ACID + MINERALS

Amino acids are the building blocks of all life on earth. They participate in many of the critical functions of biological systems. Without amino acids, life would never have formed and would cease to exist, so they are pretty important. We'll look at what specific role amino acids play in plant development, but first, let's look at what amino acids are.

There are around 500 known amino acids that are categorised in many different ways. For our purposes we'll keep it simple.

The most important concept of amino acids to understand is the difference between L-amino acids (left-handed) and D-amino acids (right-handed). This topic gets a bit technical and science still has a lot of unanswered questions. What we do know is that nature (life) has decided that the only type of amino acids it will (and can) use is the 'left-handed' variety, or L-amino acids (with very rare exceptions).

In natural soil environments with healthy and thriving ecosystems, plants obtain L-amino acids from decaying organic matter and, when necessary, synthesise what is needed. Unfortunately, modern agriculture has destroyed healthy soil micro-life so there may not be sufficient levels of naturally occurring L-amino acids. If plants must expend energy on amino acid production, they are not spending energy on more desirable, quality- and yield-enhancing functions.

Before L-amino acids can perform their essential functions within plants, they must be bioavailable. Simply applying L-amino acids to the plant is not enough. In order to be absorbed either through the roots or leaf tissue, L-amino acids must be in free form or as peptides. If they are combined into long-chains the molecules are too big to penetrate the plant tissue.

SILICIC ACID + MICRO-ELEMENTS

Silicon deposits in the epidermal cells of plants act as a barrier against penetration of invading fungi such as powdery mildew and Pythium. To penetrate the leaves, a pathogen must get through the wax (no problem), then penetrate this hard, rigid layer of silica mineral, before it even reaches the cell wall.

Most important to understand is that the silica doesn't kill the pathogen. By blocking the fungal spores from attaching, the plant maintains its health and strength. This is the best preventive approach and how nature prefers.

There are also compelling studies showing plants moving extra silicic acid to points of attack and stresses, such as insects, fungi or breakage, in an effort to resist and repair. This is much like when we get a cut and platelets in our blood rush to the cut to create a clot while the wound heals. The additional silicon deposits create even stronger tissue.



Organic L-Amino acids



Chelated bioavailable minerals



Unavailable mineral ions



L-AMINO ACID FUNCTIONS

STABILISES CHLOROPHYLL PRODUCTION

PEST AND PATHOGEN RESISTANCE

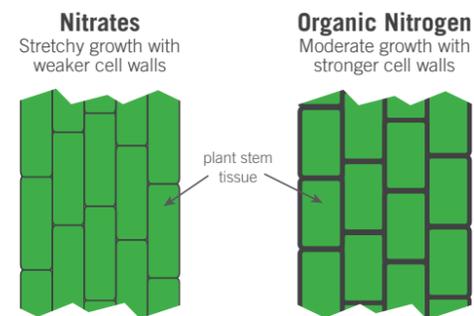
INFLUENCES VARIOUS ENZYMATIC SYSTEMS

PROVIDES RICH SOURCE OF ORGANIC NITROGEN

HIGHER NUTRITIONAL CONTENT, SIZE, FLAVOUR, COLOUR

FLOWERING IS STIMULATED

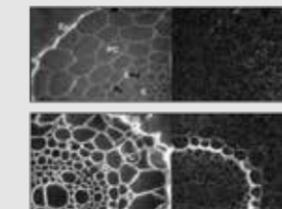
BETTER FRUIT SETTING



NUTRITIONAL INCREASED AND BALANCED UPTAKE OF NUTRIENTS

Pressurises the plant sap to allow better and more even flow of nutrients throughout the plant vascular system. Increasing nutrient levels in plant tissue raises Brix levels which naturally deter pests.

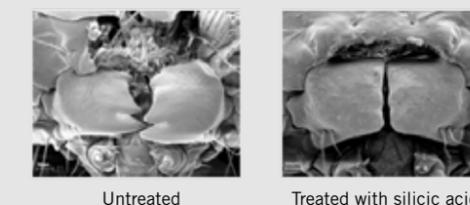
Mechanical barrier formed inside cell walls



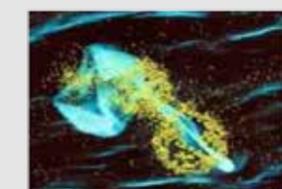
MECHANICAL BUILDS STRUCTURE AND RESISTANCE AGAINST STRESS

Deposits silicon directly into the outer layer of the cell creating a rigid barrier and more solid structure. Physically stronger plants naturally resist pests, pathogens and environmental stress.

Effect on sugar cane stalk borer larvae (South Africa)



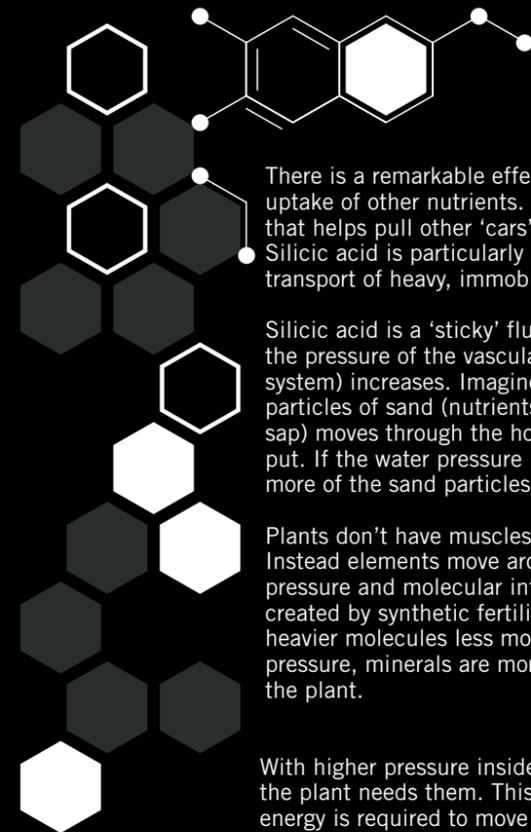
Silicic acid effect on fungal infections



Following a fungal infection, greater deposits of silicon are found around the affected plant tissue showing that silicon is selectively accumulated at the site.

Tests conducted on cucumbers, melons and tomatoes determined that soluble silicon must be available to the plant during the period of infection by fungal spores.

IMPROVES UPTAKE, ABSORPTION AND UTILISATION OF NUTRIENTS

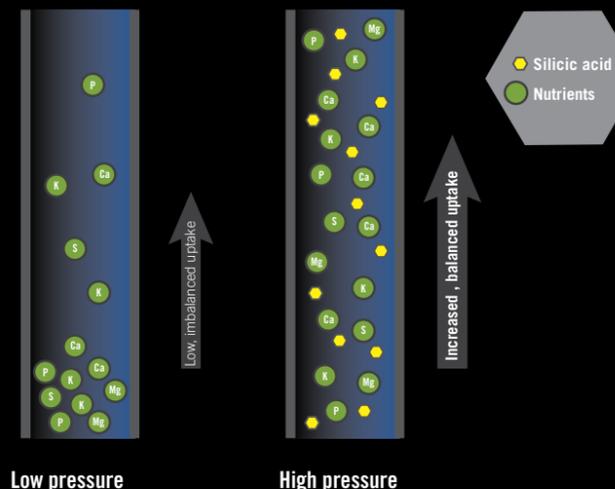


There is a remarkable effect silicic acid has on the uptake of other nutrients. Think of it as a train engine that helps pull other 'cars' throughout the plant sap. Silicic acid is particularly good at increasing the transport of heavy, immobile minerals like calcium.

Silicic acid is a 'sticky' fluid molecule. When present, the pressure of the vascular system (like our circulatory system) increases. Imagine a hose filled with tiny particles of sand (nutrients). If a trickle of water (plant sap) moves through the hose, most of the particles stay put. If the water pressure is increased to a heavy flow, more of the sand particles are pushed through the hose.

Plants don't have muscles in the same way we do. Instead elements move around the plant by suction, pressure and molecular interaction. Lower pressure created by synthetic fertilisers and over-watering makes heavier molecules less mobile. By increasing the pressure, minerals are more easily carried throughout the plant.

With higher pressure inside, all other minerals in various forms are more easily moved throughout the plant to where the plant needs them. This vascular pressure is especially important for larger plants with heavy branching as more energy is required to move nutrients along these complex and far-reaching pathways.



SILICIC ACID WITH SYNERGISTIC MICRO-ELEMENTS

Silicic acid is a naturally occurring compound found in healthy soil environments. While silicon is the second most abundant mineral in the earth's crust, it is not readily absorbed into biologic tissues in common forms (potassium silicate, calcium silicate, silica, etc.). Silicon is often found in larger molecules that cannot penetrate cell walls.

The most common agriculture input forms of silicon are potassium silicate (K_2SiO_3) and calcium silicate (Ca_2SiO_4). Much of the naturally occurring silicon is in the form of silica (SiO_2). These forms when unprocessed are not bioavailable to plants.

Before the silicon can be taken up into the roots and throughout the tissue it must first be converted by microbes into silicic acid by a process called silicification. This natural process is slow and can take weeks or months to occur in any meaningful amounts.

For indoor applications, speed and bioavailability are critical. Many times crops are grown and harvested in a matter of weeks or a couple of months. Growing medium is frequently discarded or sterilised before reuse. This destroys the micro-life populations and minimises the process of silicification.

WHY HAS THIS NOT BEEN DISCUSSED IN MODERN AGRICULTURE?

Because of this, true scientific studies are difficult due to the fact it is nearly impossible to have a control group during research. In addition, silicon is not considered 'essential' for plant growth. Only recently has it even been classified as a beneficial nutrient. It seems because of its pervasiveness, silicon has simply been taken for granted.

Why many growers have problems in their garden when bioavailable silicon is not present. Silicon is responsible for increasing dry weight, strengthening plant-tissue, balancing and increasing nutritional uptake, assimilation, immunity and resistance to all forms of biotic and abiotic stress.

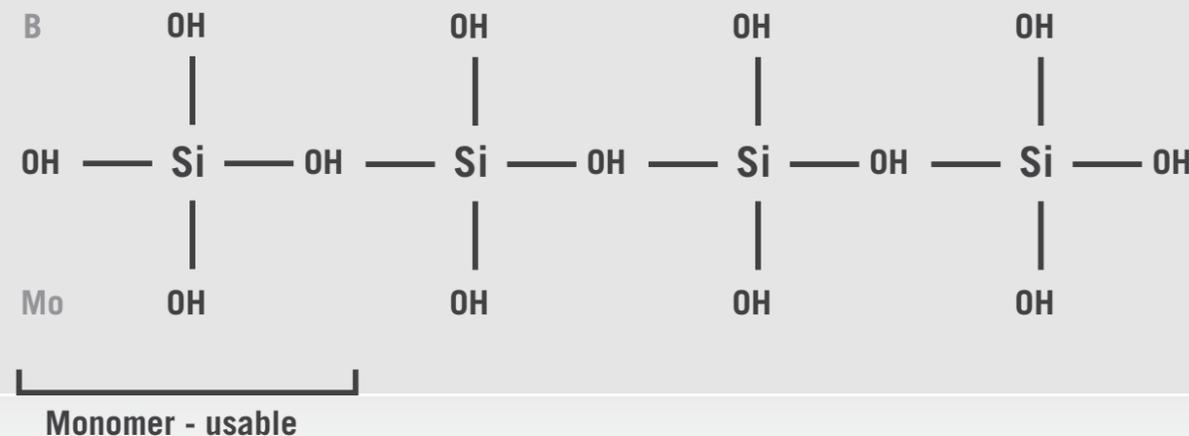
While silicon is not considered essential to plant development, the effects of silicon in plants are remarkable. And without bioavailable silicon, plants don't achieve their greatest potential. It's easy to see

With these kinds of benefits, it is critical for growers of all types to understand the power of silicic acid and make it a regular part of their fertiliser program.

THE KEY TO SILICONE UPTAKE

Whilst silicon is everywhere, it is mostly unavailable to plants. In nature, microbes convert unavailable forms of silicon into silicic acid. This is the only bioavailable form of silicon. This process is very slow and dependant on many factors, meaning a grower may add silicon supplements and not experience the true benefits of silicon.

Pure silicic acid, when stabilised as in FASILITOR, is 'packed' in polymer form. It 'unpacks' into monomer form when added to clean water, which allows it to enter the plant and carry nutrients (such as boron and molybdenum) along with it. Over time silicic acid will repolymerise, which is why it is important to mix fresh nutrients and feed immediately.



FASILITOR

NUTRITION MANAGER AND PLANT STRENGTHENER

ABOUT FASILITOR

As the flagship of the APTUS product lineup, FASILITOR is extremely concentrated, pure and fast acting.

While it is a silica-based solution, it is unlike any other silica product on the market. FASILITOR's patented formula works by increasing vascular pressure within the plant to heighten mineral translocation throughout its entire structure resulting in more complete, robust and quality tissue formation.

The patented and stabilised concentration of monomer silicic acid particles allows for fast response against abiotic and biotic stress factors (environmental and pests), shorter internodal spacing, incredible bio-availability and increased yields all while utilising natural mechanisms within the plant to gain these benefits.

FASILITOR EDUCATION

Silicic acid provides bioavailable silica that is easily translocated to needed areas within the plant including signs of insect attack, cell wall and tissue formation. In addition, FASILITOR's silicic acid formula works to distribute boron (B) evenly throughout the plant's tissue which is the precursor for cell formation, movement of plant energy (sugars) and setting flowers.

The third and final trace mineral in FASILITOR is molybdenum. Molybdenum is an essential component of enzymatic processes within the plant that convert nitrates into compounds used to manufacture amino acids, convert inorganic phosphorus into organic forms within the plant and is also crucial to bacteria that fix atmospheric nitrogen into your soil.

WHY USE FASILITOR?

- Resistance against abiotic (environmental: temperature, wind, drought)
- Resistance against biotic stress (living: pests and pathogens)
- Improves uptake, absorption and utilisation of nutrients
- Stronger cell structures and epidermis layer creating thicker tissue (increases dry yield)
- Reduces internodal spacing by adjusting mineral translocation to new limbs
- Increases resistance against salinity (nutrient salt buildup) by limiting uptake of excess minerals present in the planting medium
- Reduces transpiration (loss of moisture from the leaves) by forming thick cell walls which are made primarily of silica and calcium

HOW TO USE

Add FASILITOR to the water in your reservoir first before any other products. This is important due to the method in which the monomer-silicic-acid particles are stabilised. Failure to do so will result in a loss of FASILITOR's benefits.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Regular feeding	0.15 ml per 1L
Anti-stretch flowering	0.3 ml per 1L
Foliar spray	1 ml per 1L



FASILITOR KEY INGREDIENTS

- Silicic Acid – Mineral translocation adjuster, cell wall strengthener, abiotic and biotic stress reduction agent
- Boron – Precursor to cell wall formation, translocator of plant energy (sugars), beneficial agent for flower and fruit formation
- Molybdenum – Creator of crucial beneficial plant enzymes, synthesiser of organic phosphorus and crucial to atmospheric nitrogen-fixing bacteria in the soil

TIPS FROM THE FIELD

- Do not contaminate with measuring instruments. Pour FASILITOR into container of choice for measuring.
- FASILITOR makes plants more compact through increasing the variety of minerals being translocated throughout the plant at any given time. This mature, robust growth is a result of complete formation through increased mineral variety and density.
- If your plants are experiencing nutrient deficiencies, FASILITOR can often help correct these apparent effects. In a soil-container environment, FASILITOR, through the action of silicic acid, will work to regulate how much of a mineral is let into the plant. This activity can minimise the effects of what would be a toxicity, allowing for healthy growth once again.

STARTBOOST

ROOT AND GROWTH BOOSTER

ABOUT STARTBOOST

STARTBOOST, along with FASILITOR, is a foundation product of the APTUS Premium Collection range. APTUS STARTBOOST consists of two natural ingredients: humic acid and protein hydrolysate.

This synergy of natural ingredients promotes increased transport of nutritional elements across plant cell membranes whilst reducing levels of toxic elements in the growing medium. STARTBOOST also provides organic nitrogen from L-amino acids for natural and initial growth. STARTBOOST is also beneficial for the propagation and root development of seeds and cuttings.

STARTBOOST EDUCATION

Organic nitrogen provided by L-amino acids promotes robust vegetative growth and photosynthesis without risk of burning or overdose.

A wide spectrum of natural L-amino acids provides beneficial stimuli to bacteria population numbers within the planting medium.

Humic substances have a positive effect on plant physiology by influencing nutrient uptake and root system interactions within the planting medium.

Through interactions with various compounds in the soil, countless complexes are formed from organic and mineral components. From the formation of these complexes, compounds may dissolve, mobilise and transport products throughout the medium. It is these sets of complex interactions with humic substances that provide soil health, structure and ultimately, benefit to the plant growing above.

WHY USE STARTBOOST?

- Powerful stimulator of tissue formation through organic nitrogen provided by protein hydrolysate
- Natural chelator of elements present in the planting medium
- Provider of organic nitrogen in the form of amino acids resulting from enzymatic digestion of natural materials
- Beneficial agent for propagation of seeds and cuttings

HOW TO USE

Add STARTBOOST to your reservoir every feeding during the entire vegetative phase and into the first week of flowering to assist with a healthy transition to the bloom cycle.

Transplant root dip: 10 ml per 1 litre.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Regular feeding	0.25 ml per 1L
Seedlings/clones	1 ml per 1L
Transplant root dip	10 ml per 1L
Foliar spray	1 ml per 1L



STARTBOOST KEY INGREDIENTS

- L-amino acids – Product of enzymatic digestion of natural materials, provider of organic nitrogen (N), stimulant to healthy bacteria population numbers
- Humic Acid – Building block of soil structure and health, natural chelator of various elements in the planting medium

TIPS FROM THE FIELD

- Begin feeding with STARTBOOST (plus FASILITOR) as soon as your plants develop initial roots and leaves. Continue feeding throughout the entire vegetative phase.
- Use a 1:1000 dilution to feed new clones or starts from seeds (1 ml per 1 litre). This is effective as a pre-soak for cloning or seed starting medium.
- During transplanting, dip the roots of the plants directly in a 1:100 mixture (10 ml per 1 litre).
- Do not keep STARTBOOST in your reservoir for more than 2 – 3 days in order to avoid organic biofilm buildup and blockage of irrigation drip lines.



ECOZEN

ENZYME BOOSTER AND MICRO-LIFE STIMULATOR

ABOUT ECOZEN

ECOZEN is a powerful blend of enzymes that have many different functions, including, keeping the root surface clean and removing dead organic matter and residues. These are important functions for soil health, rhizosphere and maintaining active nutrient uptake.

ECOZEN also contains enzyme complexes that transform accumulated or precipitated salts into usable plant nutrients. This helps to stabilise EC in the medium and improves the plant's natural ability to absorb more nutrients while avoiding fertiliser salt build-up that can cause antagonism, lock-up and pathogen problems in the root system.

Overall, ECOZEN is an effective root and soil conditioner that works in conjunction with microbial life and bioavailable nutrition. ECOZEN also contains a small amount of manganese, which stimulates micro-life, which in turn helps further breakdown and recycles the material broken down by the enzymes.

ECOZEN EDUCATION

As roots grow, some die off to make room for new growth. This results in cellulose (starchy plant matter) around the roots, which inhibits nutrient absorption and microbial development. The cellulase in ECOZEN breaks down cellulose and keeps the roots clean.

Beta-glucanase enzyme complexes transform precipitated nutrient salts into plant-available nutrients helping to minimise build-up and increase uptake.

Manganese (Mn) plays a role in the process of supplying energy for photosynthesis. In addition, high concentrations of manganese correlate to high levels of sugars in plants.

WHY USE ECOZEN?

- Grow mediums can be used longer and for multiple cycles (less medium replacement saves cost and work)
- Stabilises EC in mediums and prevents salts accumulation (decreases nutrient lock-up)
- Can fertilise later in the cycle without risk of built up salts affecting flavour and quality
- Keeps root system and medium clean (improves absorption, reduces residues)

HOW TO USE

Add ECOZEN to your nutrient mixture every feeding during all stages of plant growth to keep the medium clean and healthy.

ECOZEN may also be applied at double strength once per week if desired. Do not allow ECOZEN to sit in a reservoir with nutrients for more than 24 hours. Preferably add just prior to feeding.

For longer, multi-day reservoirs, add ECOZEN to the nutrient reservoir 24 hours before replacing with fresh feed.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
With every feeding	0.25 ml per 1L
Once weekly application	0.5 ml per 1L



ECOZEN KEY INGREDIENTS

- Cellulase and beta-glucanase enzyme complexes – Root zone conditioners
- Manganese – Crucial component for photosynthesis

TIPS FROM THE FIELD

- Reuse your grow medium for multiple cycles. Flush medium between cycles with a higher dosage (1 ml per 1 litre) of ECOZEN to clean out dead plant material and accumulated nutrient salts. For best results; soak medium for 24 hours in a solution of 1 ml per 1L ECOZEN & 2 ml per 1L MINERAL-CALMAG.
- Do not leave a reservoir with nutrients and ECOZEN for more than a day to avoid nutrient degradation. Ideally, ECOZEN is added last to the nutrient solution just before feeding.
- Enzymes start to work instantly, especially at temperatures higher than 20 degrees celsius.
- Use ECOZEN at least once a week to keep the root area clean and nutrient assimilation optimised.



BLOOMBOOST

BLOOM BOOSTER AND QUALITY ENHANCER

ABOUT BLOOMBOOST

APTUS BLOOMBOOST is an additive used throughout the entirety of the fruiting and flowering periods of a plant's lifespan. BLOOMBOOST contains a blend of plant available elements including potassium, sulphur and boron that work together to increase fruit/flower size, fibre mass and quality. APTUS has designed this product to provide these three elements in precise amounts at desired times during the plants' reproductive cycles to maximise harvests.

BLOOMBOOST is an excellent all-in-one health additive for your plants during their reproductive phase of growth. Using BLOOMBOOST throughout the fruiting and flowering phases of growth allows for increased flower setting, larger harvests and heightened aroma of end products.

BLOOMBOOST EDUCATION

Potassium provided by BLOOMBOOST works to form healthy fibrous fruits and flowers. The underlying amount of slight but constant potassium is designed by APTUS based on Dr. Albreicht's theories of mineral antagonism to give the benefit of potassium's effects in initial flower development.

Sulphur is a crucial component in the formation of proteins, certain plant hormones and aids in the formation of certain oils and volatile compounds found in some plants. The additional sulphur encourages your plants' natural genetic expression, enhancing their aroma and taste by increasing terpenes and flavonoids.

The last element in BLOOMBOOST, boron, works to preserve the integrity of various membranes within the plant allowing for increased structural integrity during flower development.

WHY USE BLOOMBOOST?

- Precursor to the healthy formation of chlorophyll for optimal photosynthetic activity during the bloom phase allowing for healthy growth and maturation
- Contains elements crucial to the formation of certain oils and volatile compounds within plants.
- Assists in the development of a healthy reproductive system within the plant. This includes heavy flower setting as well as healthy pollen and seed formation for breeders.
- Increases trichome and terpene production.

HOW TO USE

Add BLOOMBOOST to your reservoir every feeding from the second week of the flowering stage until harvest.

BLOOMBOOST can be continued until harvest with no negative affect on quality and flavour.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Regular feeding	0.2 ml – 0.5 ml per 1L



BLOOMBOOST KEY INGREDIENTS

- Boron – Agent allowing for healthy cell wall synthesis and cell division
- Sulphur – Component of essential amino acids, aromatic characteristic promotant
- Potassium – Thickener of fruit and flower structures

TIPS FROM THE FIELD

- BLOOMBOOST may be used at a higher dilution ratio (up to 0.5 ml per 1L) for an increased result in quality. Be sure your PPM and base nutrient (bloom fertiliser) mixture will allow for increased dosage.



MASSBOOST

CALCIUM/MAGNESIUM AND BUD BOOSTER

ABOUT MASSBOOST

MASSBOOST is an organo-mineral plant booster that prevents calcium (Ca) and magnesium (Mg) deficiencies while stimulating powerful fruit set and development.

Calcium and magnesium are easily locked up or combined with other minerals in the growing medium forming what we call 'junk salts'. This active behaviour can be a problem when trying to dial in supplementation of calcium and magnesium for your plants. APTUS takes a unique approach in that our calcium and magnesium are chelated with natural L-amino acids much like PEAKBOOST and FINALEBOOST. This makes the normally very open minerals be more directly available for assimilation into the plant.

Whereas most other calcium and magnesium products are classic mineral salt formulations, MASSBOOST functions as a pure source for the plants' optimum and continued health.

MASSBOOST EDUCATION

Calcium largely comprises the cell walls of plant cells which gives them structure. An uninterrupted supply of calcium allows for stout flowers, stems, leaves and the continued healthy formation of new plant tissue.

It is important to have available calcium to prevent blossom end rot, dropped flowering sites and necrosis of leaf tissue.

Chelated magnesium allows for optimal supply to enzymes in the plant which require the element to perform their tasks properly.

Magnesium is the central core of the chlorophyll molecule. A chelated supply allows for continued robust chlorophyll development allowing the plant to perform photosynthesis at optimal levels.

WHY USE MASSBOOST?

- Provides organic nitrogen from L-amino acids that stimulate plant development
- High bioavailability, 100% water soluble and leaves no residue
- Combines calcium (Ca) and magnesium (Mg) with L-amino acids to eliminate or correct deficiencies
- Improves structure and firmness of the flower and fruit
- Provides the extra boost plants need during certain plant-development phases and other important natural bio-stimulants

HOW TO USE

Add MASSBOOST to your reservoir every feeding as per feed schedule. If using MASSBOOST as a bud booster additive with another regime, add 0.5 ml per 1L in weeks 3, 5 and 7 of the flowering phase.

When mixing with any phosphorus supplements (PEAKBOOST or mineral fertilisers), be sure to mix one into the solution before adding the other to minimise the chance of forming calcium-phosphate bonds which render both unavailable to the plant.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Clones & seedlings	0.25 ml per 1L
Regular feeding (vegetative)	0.25 – 0.33 ml per 1L
Regular feeding (flowering)	0.25 – 0.5 ml per 1L
Foliar spray (maintenance)	2 ml per 1L
Foliar spray (repair)	4 ml per 1L



MASSBOOST KEY INGREDIENTS

- Calcium (Ca) – Integral structural element to plant cells
- Magnesium (Mg) – Central element in the formation of chlorophyll, source of photosynthetic activity, enzymatic process activator

TIPS FROM THE FIELD

- Use MASSBOOST with FINALEBOOST in the last weeks for yield, firmness and quality.
- Pay attention when mixing PEAKBOOST and MASSBOOST as they can react with each other. Always add one, dilute and mix, then add the other. If using multiple phosphorus based products, take care when adding MASSBOOST as phosphorus and calcium, when combined in high concentrations, may cause deposits and residues.
- Because of the chelation with L-amino acids, MASSBOOST is up to 8 times stronger than other 'typical' CALMAG supplements. If using MASSBOOST during early growth, start with a lower dosage and gradually work up to full dosage based on the plants response.



PEAKBOOST

PHOSPHORUS BOOSTER



ABOUT PEAKBOOST

PEAKBOOST along with its sibling product FINALEBOOST make up the APTUS flower development and bulking solution. Perhaps the most noticeable implementation of the Third pillar of APTUS philosophy: Mineral Antagonism, PEAKBOOST moves the vast majority of phosphorus used during the bloom cycle solely into one product. With this formulation, APTUS has allowed for absolute control of heightened phosphorus application throughout the specific phases of a plant's growth cycle.

On top of allowing for specific phosphorus application in consideration of your plant genetics, stage in the growth cycle, or desired flower set behaviour, the phosphorus in APTUS PEAKBOOST is chelated into an organo-mineral product. With the addition of L-amino acids, the phosphorus has eyes only for the plants' roots and has a much smaller chance of being affected by outside factors.

The specific application of chelated phosphorus allows for optimal health by removing the negative antagonistic effects of cheap bulk products containing high amounts of both phosphorus and potassium. With APTUS PEAKBOOST, you will see the difference in your final harvest by having optimal chelated phosphorus with the elements usually antagonised away including: zinc, iron and copper.

PEAKBOOST EDUCATION

- Organic nitrogen provided by L-amino acids promotes robust tissue formation and photo-synthesis.
- Phosphorus stimulates flower bud formation, set and development.
- Allows for optimal uptake of trace minerals during flowering cycle commonly minimised by fertilisers containing large amounts of both non-chelated phosphorus and potassium.

WHY USE PEAKBOOST?

- Provides high levels of natural bioavailable phosphorus during the early generative and bloom stages
- Minimises antagonism and lockout of phosphorus with other nutrients
- Powerful stimulating effect on the blooming process
- 100% water soluble and organo-mineral leaving no residue

HOW TO USE

Add PEAKBOOST to your reservoir every feeding from the first week to the fourth week of the flowering stage. It is okay to extend or shorten the usage of PEAKBOOST based upon the total flowering time of your specific plant.

When mixing with any calcium supplements (like MASSBOOST), be sure to mix one in the solution before adding the other to minimise the formation of calcium-phosphate bonds which render both unavailable to the plant.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Regular feeding	0.1 ml – 0.3 ml per 1L
Foliar spray (maintenance)	2 ml per 1L
Foliar spray (repair)	4 ml per 1L



PEAKBOOST KEY INGREDIENTS

- L-amino acids, which provide organic nitrogen (N)
- High concentrations of natural phosphorus (P)

TIPS FROM THE FIELD

- Gradually increase PEAKBOOST dosage throughout the bloom cycle until your flowers are well set and ready for bulking. It is okay to start FINALEBOOST transition early on plants with longer maturation periods.



FINALEBOOST

MATURATION BOOSTER

ABOUT FINALEBOOST

FINALEBOOST along with its sibling product PEAKBOOST make up the APTUS flower development and bulking solution. Perhaps the most noticeable implementation of the Third Pillar of APTUS philosophy: mineral antagonism, FINALEBOOST moves the vast majority of potassium used during the bloom cycle solely into one product. With this formulation, APTUS has allowed for absolute control of heightened potassium application throughout the specific phases of a plant's growth cycle.

On top of allowing for specific potassium application in consideration of your plant genetics, stage in the growth cycle, or desired flower set behaviour, the potassium in APTUS FINALEBOOST is chelated into an organo-mineral product. With the addition of L-amino acids, the potassium has eyes only for the plants' roots and has a much smaller chance of being affected by outside factors.

The specific application of chelated potassium allows for optimal health by removing the negative antagonistic effects of cheap bulk products containing high amounts of both potassium and phosphorus. With APTUS FINALEBOOST, you will see the difference in your final harvest by having optimal chelated potassium with the elements usually antagonised away including: nitrogen, calcium and magnesium.

FINALEBOOST EDUCATION

- Organic nitrogen provided by L-amino acids promotes robust tissue formation and photosynthesis while minimising risk of burning or overdose.
- FINALEBOOST improves the functions of the plants' respiratory system by regulating the opening of the stomata. When deficient, plants can wilt unnecessarily.
- High concentrations of sulphur are put into FINALEBOOST to combine with BLOOMBOOST to give you the high sulphur amounts needed for the ultimate result of aroma, quality and terpene production.

WHY USE FINALEBOOST?

- Stimulates fruit and bud maturation
- Firmer and more nutritious end product
- Improves crop quality by increasing production of sugars and amino acids
- Minimises antagonism and lockout of potassium with other nutrients
- Powerful stimulating effect on the blooming and finishing process
- 100% water soluble and organo-mineral leaving no residue

HOW TO USE

At minimum, add FINALEBOOST to your reservoir weeks five through eight of the flowering stage. With some plants you may be able to use FINALEBOOST at rates 2 – 3x higher than recommended to increase weight and quality during finishing. Always test on a few plants before applying at these rates.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Regular feeding	0.1 – 0.67 ml per 1L
Foliar spray (maintenance)	2.5 ml per 1L
Foliar spray (repair)	5 ml per 1L



FINALEBOOST KEY INGREDIENTS

- Potassium – Regulator of plant perspiration, fibrous mass enhancer, enzyme activator
- Sulphur – Component of essential amino acids, aromatic characteristic promotant

TIPS FROM THE FIELD

- Gradually increase FINALEBOOST dosage throughout the bloom cycle from start, whilst still using PEAKBOOST. As FINALEBOOST increases, PEAKBOOST decreases.
- With shorter flowering genetics, you may want to fast track the PEAKBOOST/FINALEBOOST transition so the last 4 – 5 weeks of flower are without PEAKBOOST entirely.
- Foliar references. You don't want to spray sulphur on your finished pristine flowers.



MINERAL-CALMAG

CALCIUM AND MAGNESIUM BUFFER

ABOUT MINERAL-CALMAG

MINERAL-CALMAG is a 100% water-soluble additive containing necessary plant-available forms of nitrogen (N), calcium (Ca) and magnesium (Mg). This formulation has been designed to prevent common deficiencies while buffering your feed water when growing in soil-less mediums such as coco, perlite, rockwool, hydroton or recirculating systems and/or using filtered sources of water. MINERAL-CALMAG can be used throughout the entirety of the vegetative and flowering stages of growth.

APTUS BASE 'liquid' contains zero calcium and must be used in conjunction with either MASSBOOST OR MINERAL-CALMAG. Deciding which APTUS CALMAG to use (MASSBOOST or MINERAL-CALMAG) is largely dependent on your growing method.

MASSBOOST is an organo-mineral product which leads to organic biofilm build-up when kept in a nutrient reservoir for more than 2-3 days. While MINERAL-CALMAG is 100% mineral, super clean and will never spoil, MASSBOOST contains beneficial L-Amino Acids and is the CALMAG of choice for growers mixing fresh feed daily and can also be administered via foliar application. MINERAL-CALMAG has excellent pH stabilising capabilities and is the CALMAG of choice for growers running longer reservoirs and recirculating systems.

MINERAL-CALMAG EDUCATION

Through high-intensity irrigation methods often seen in modern indoor cultivation practices, coconut-fibre based planting mediums can become deficient of calcium (Ca) resulting in high levels of accumulated potassium (K) and sodium (Na). This excess of potassium (K) and sodium (Na) most often results in antagonism and lockout, leading to deficiencies within the plant.

Due to the mixture of nutrients coming into the plant being fully optimised for healthy growth, allowances for varying excess of potassium (K) and sodium (Na) are not considered. Because of this, mineral antagonism occurs, preventing the uptake of magnesium (Mg), causing unhealthy growth and the appearance of deficiencies.

MINERAL-CALMAG replaces the calcium (Ca) ions lost through constant irrigation, providing the buffering capabilities needed to prevent this antagonistic exchange.

WHY USE MINERAL-CALMAG?

- Concentrated and easy to use dilutions of just 0.4 ml – 1 ml per 1 litre
- Utilises the highest grade raw minerals available providing the absolute cleanest possible calcium & magnesium additive for your cultivation system
- Prevents coconut-fibre based planting mediums from becoming a source of nutritional imbalance, lending stability to your crops' flowering stage of growth
- Replaces the calcium (Ca) ions lost through constant irrigation that occurs during indoor cultivation practices
- Supplements magnesium (Mg) that is pushed away when excess potassium is present from imbalance

HOW TO USE

Shake well before use. If using FASILITOR, ensure FASILITOR is mixed first. Add MINERAL-CALMAG second, mix well, then add the remainder of your products.

In soil: Use once a week.

In coco/soil-less/hydro: Use in combination with APTUS BASE every watering.

Do not use any additional non-APTUS sources of phosphorus

DOSAGE INSTRUCTIONS

Feeding Type	Amount
With a 2-part NPK	0.4 ml per 1L
With APTUS BASE and municipal water	0.6 ml per 1L
With APTUS BASE and RO/Soft water	0.8 - 1 ml per 1L



MINERAL-CALMAG KEY INGREDIENTS

- Nitrogen (N) – Crucial element in chlorophyll, crucial component of plant amino acids
- Calcium (Ca) – Integral structural element to plant cells
- Magnesium (Mg) – Central element in the formation of chlorophyll, source of photosynthetic activity, enzymatic process activator

TIPS FROM THE FIELD

- MINERAL-CALMAG is required when using APTUS BASE. If you use APTUS Liquid BASE, ensure you use MINERAL-CALMAG or MASSBOOST to avoid deficiencies. APTUS BASE contains zero calcium and must be used in conjunction with MINERAL-CALMAG or MASSBOOST.
- When mixing your nutrients, be careful to avoid adding phosphorus (P) supplements like PEAKBOOST directly onto MINERAL-CALMAG without mixing well. Always add and stir each product before adding the next to minimise local fallout which can decrease the quality of your nutrient mix.
- During weeks where a high number of products are used, your available amount of nitrogen (N) can get high. If you are not using APTUS BASE, and are using a 2- or 3-part base nutrient, you may want to consider decreasing the part containing nitrogen by 10 – 20%.



BASE

COMPLETE LIQUID FERTILISER

ABOUT BASE

APTUS BASE 'liquid' is a 100% mineral-based fertiliser compatible with all growing mediums and hydroponics systems. BASE is the only base nutrient product you need to use from the beginning of vegetative growth until the end of the fruiting and flowering phase. Compared to other competing products requiring you to purchase up to four separate bottles, BASE is a 1-part liquid fertiliser for both grow and bloom.

APTUS BASE is easy to use throughout your plants' growth cycle. Simply add at the rate of 1 – 2 ml per 1L with the addition of either MASSBOOST or MINERAL-CALMAG. Enjoy low dilution ratios and high mineral stability throughout a wide pH range. Whatever your growing method, APTUS BASE will impress.

BASE EDUCATION

APTUS BASE provides essential macro and micro elements needed for plant growth throughout the vegetative and bloom phases.

The ingredients put into APTUS BASE were chosen specifically to not include chlorides or ballast salts causing unnecessary contamination of the growing substrate.

Without ballast salts or chlorides, the EC reading taken from your feed solution gives you a true view of the nutrient concentration.

APTUS BASE contains 0% calcium and must be used with either MASSBOOST (our organo-mineral CALMAG) or MINERAL-CALMAG (our mineral based 'clean' CALMAG).

WHY USE BASE?

- Easy to use – 1-part NPK fertiliser specifically designed for both grow and bloom.
- A recommended dilution rate of 1 – 2 ml per 1L throughout the plants' entire growth cycle
- Cost effective and stable
- Applicable in all major growing mediums including: soil, coco, perlite, hydroton, peat moss and rockwool-based mediums
- Contains no chlorides or ballast salts minimising the formation of junk salts in your planting medium

HOW TO USE

Add APTUS BASE Liquid to your reservoir during both vegetative and flowering periods.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Regular feeding	1 – 2 ml per 1L



BASE KEY INGREDIENTS

- Nitrogen – Crucial element in chlorophyll, crucial component of plant amino acids
- Phosphorus – Improves formation of flowers, stimulator of root development
- Potassium – Core component of the unit of plant energy, ATP, controller of plant respiration
- Magnesium – Central core of the chlorophyll molecule essential for photosynthesis
- Boron – Crucial to healthy cell wall formation
- Molybdenum – Converter of inorganic phosphorus into organic forms within the plant
- Iron – Essential component to chlorophyll formation, crucial to critical enzyme formation
- Manganese – Crucial agent for root growth, resistor of root zone originating pathogens
- Zinc – Essential component in the formation of auxins regulating plant growth
- Copper – Activator of enzymatic reactions

TIPS FROM THE FIELD

- If starting new from seed, dilute into feed solution at a rate of 0.5 ml per 1L along with all other vegetative APTUS additives (FASILITOR, MASSBOOST or MINERAL-CALMAG, STARTBOOST) from first signs of leaves. Increase dose to 1 ml per Litre as plants begin to establish.
- In high-intensity flowering situations where plants are grouped together in one system, or if you have a heavy feeder, you may increase feed levels to 2 ml per 1 litre. Always check your EC before feeding.



BASEBOOST

COMPLETE TIME-RELEASE FERTILISER PELLET

ABOUT BASEBOOST

BASEBOOST is a time-release 100% organic pellet fertiliser that provides complete nutrition for plant development for up to 3 months. Each application lasts 2-3 months and can be reapplied for longer cycles. It is specially formulated with macro-nutrients and micro-nutrients, L-amino acids and bio-stimulants to enhance plant development over a period of time.

BASEBOOST is an effective standalone as a complete fertiliser for the grower with little time or trying to simplify the work of growing. For advanced growers looking to maximise yields, BASEBOOST is an effective replacement for a typical base NPK nutrient in combination with the rest of the Premium Collection boosters.

You can apply BASEBOOST during transplanting by mixing into the growing medium or as a top dressing to extend the growing cycle (especially outdoor applications).

BASEBOOST EDUCATION

Organic nitrogen provided by L-amino acids promotes robust vegetative growth and photosynthesis without risk of burning or overdose.

Full spectrum organic L-amino acids provide growth materials, plant and microbe bio-stimulation and boost beneficial bacteria populations.

Complete time-released nutrition feeds plants as they require the nutrients rather than force feeding with chemical salts.

L-amino acids stimulate natural plant processes and growth, including stimulating micro-life.

Complete nutrient profile minimises plant stress due to environment, pests and pathogens. Healthier plants means greater yield and quality.

WHY USE BASEBOOST?

- Simple and complete 100% organic plant nutrition – nothing else but water is required for a 3-month cycle, vegetative and flowering
- Complete formulation reduces fertiliser input and work
- Easy to use – application is once every 2 to 3 months simply by mixing in the pellets or topdressing
- Perfect for remote locations and long-lasting crop cycles
- Provides organic nitrogen and L-amino acids that stimulate plant development
- Helps condition soil, improves plant development and stimulates micro-life
- Long shelf-life if properly stored

HOW TO USE

Application is incredibly simple. You can either mix into your soil or planting hole prior to transplanting or top-dress and water in. Apply with water only or add boosters for greater effect. BASEBOOST is effective and safe even for young plants. BASEBOOST can take a week or two to fully kick in so it's a good idea to use FASILITOR and STARTBOOST at the beginning for a faster start.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Regular feeding	100 grams per 25 Litres of soil/media



BASEBOOST KEY INGREDIENTS

- L-amino acids which provide organic nitrogen (N)
- Primary macro-nutrients: nitrogen (N), phosphorus (P), potassium (K)
- Secondary macro-nutrients: calcium (Ca), magnesium (Mg) and sulphur (S)
- Organically chelated micro-nutrients such as, boron (B), iron (Fe), manganese (Mn), zinc (Zn)

TIPS FROM THE FIELD

- Use more pellets for sandy soil (200 grams per plant) than for clay or heavy soil (100 grams per plant), per cycle (2 – 3 months).
- If your cycle is longer than 3 months, apply a second treatment as top-dressing and water from the top, or mix pellets into the top couple inches of soil.
- In case of deficiencies, simply add more pellets as topdressing and water from the top. The pellets will be solubilised and the nutrients assimilated by the plant.
- Mix into the ground during soil preparation or simply place at the bottom of each planting hole.
- For better results outdoors, use with FASILITOR, STARTBOOST and BLOOMBOOST.
- For better effect indoors, use with all boosters.
- If mixing into inert/unamended media, mix in, then saturate media one week prior to transplant.

BREAKOUT POWDER

PHOSPHORUS & POTASSIUM BOOSTER

ABOUT BREAKOUT POWDER

APTUS BREAKOUT POWDER provides great value for small- and large-scale cultivators as an easy to use flower setting and bulking product. BREAKOUT POWDER is formulated using the highest quality water-soluble concentrates of phosphorus, potassium and sulphur, helping to achieve higher yields and better taste.

With its easy-measure formulation, APTUS BREAKOUT POWDER takes the guess work out of application rates. Accurate application can be done in the field with no scales or extra devices. APTUS BREAKOUT POWDER is an economical, stable and powerful flower enhancer that promotes additional flower growth and development in the last 3 weeks of the bloom phase.

BREAKOUT POWDER EDUCATION

BREAKOUT POWDER is not an equivalent to PEAKBOOST and FINALEBOOST. The APTUS mineral antagonism principle of separating phosphorus and potassium is not present in this product. BREAKOUT POWDER provides a high-quality option for gardeners looking for a cost effective, water-soluble flowering additive.

BREAKOUT POWDER consists of monopotassium phosphate, a concentrated source of both phosphorus and potassium. These elements are 100% critical to the production of energy and photosynthetic activity within the plant. In addition, BREAKOUT POWDER contains potassium and magnesium sulfates to ensure strong aroma with the highest quality end products.

WHY USE BREAKOUT POWDER?

- Low-cost and high-quality source of important phosphorus, potassium and sulphur
- Economical with extremely low-dilution ratio of up to 100 grams per 100 litres
- Pre-filled easy-measure 100 g sachets allow you to pour a half (50 g per 100 litres) or full (100 g per 100 litres) strength application
- Provides a strong source of sulphur to enhance colours and flavours during the maturation stage

HOW TO USE

Add one sachet at a time to your mixed reservoir and stir well. Always add BREAKOUT POWDER after all other fertilisers and Boosters have been added. Remember to always add FASILITOR to your clean reservoir before any other products. Use during the last 3 weeks of flowering, or if flushing, the last 3 weeks of your feeding schedule.

To increase calyx size and dry weight without losing quality, use BREAKOUT POWDER for the first 3 days of your 4th last week. Do not use in conjunction with PEAKBOOST or FINALEBOOST.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
Week 6 / 3rd last week of feed schedule	50 grams per 100 litres
Week 7 / 2nd last week of feed schedule	100 grams per 100 litres
Week 8 / last week of feed schedule	100 grams per 100 litres



BREAKOUT POWDER KEY INGREDIENTS

- Phosphorus (P): Improver of overall crop quality, crucial element in photosynthetic units of energy
- Potassium (K): Essential component for the production of photosynthetic units of energy, regulator of plant-water content and CO₂ consumption
- Sulphur (S): Vital component of plant proteins, essential to formation of certain oils in specific plants

TIPS FROM THE FIELD

- Always ensure all other APTUS products have been correctly added to the reservoir and mixed well before adding BREAKOUT POWDER.
- For best results and fruit set always ensure BREAKOUT POWDER is used during the last 3 weeks of flowering, or the last 3 weeks of your feeding schedule.
- Use only at 50 grams (half a sachet) per 100L for the first week (3rd last week of bloom feed schedule) and 100g per 100L for the second and third.
- Do not use in addition to PEAKBOOST and or FINALEBOOST.
- Always check your EC after adding BREAKOUT POWDER to your reservoir. Adjust with fresh water if necessary.

SYSTEM-CLEAN

PLANT SAFE IRRIGATION LINE CLEANER

ABOUT SYSTEM-CLEAN

SYSTEM-CLEAN is a powerful oxidiser that prevents microbial attacks, line blockages and nutrient build-up in irrigation systems. A clean irrigation system improves growth and development of plants (especially in the root system) by allowing more oxygen and nutrients to reach the plant without affecting the pH.

Unabsorbed nutrients (organic leading to biofilm and mineral leading to salt) can build up in the cultivation system. These remaining nutrients acidify (lower pH) the growing medium, increasing the chance of microbial attack by providing nutrition for pathogens.

SYSTEM-CLEAN EDUCATION

SYSTEM-CLEAN helps maintain a healthy irrigation system by removing built-up biofilm/salt and keeping high levels of oxygen in the nutrient solution.

WHY USE SYSTEM-CLEAN?

- Prevents loss of nutrients and oxygen in irrigation systems (improves efficiency of irrigation system and plant absorption)
- Removes build-up of biofilm/salt in irrigation systems (prevents nutrient build-up)
- Adds extra oxygen to the root zone (increases dissolved oxygen levels)
- Removes source of pathogens

HOW TO USE

Add SYSTEM-CLEAN to the nutrient tank, preferably just before each watering at 0.25 ml SYSTEM-CLEAN per 1L of water. Add SYSTEM-CLEAN last to the nutrient tank after adjusting the pH value. SYSTEM-CLEAN will last for maximum 3 days in the nutrient solution. If your nutrient mix stands for more than 3 days, mix SYSTEM-CLEAN to the entire amount of water in the nutrient tank to help minimise biofilm/salt and residue build-up.

DOSAGE INSTRUCTIONS

Feeding Type	Amount
With every tank / reservoir	0.25 ml per 1L
System flush / clean between cycles	0.5 ml per 1L



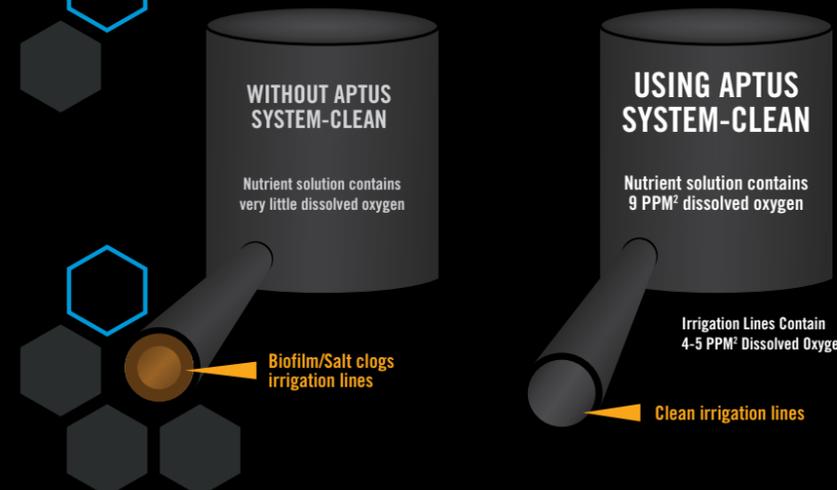
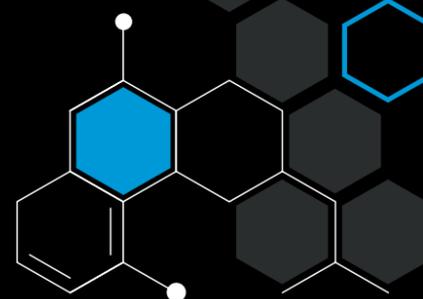
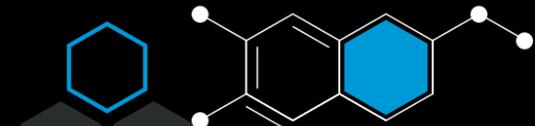
SYSTEM-CLEAN KEY INGREDIENTS

- 7.9% food grade stabilised H₂O₂



TIPS FROM THE FIELD

- Add SYSTEM-CLEAN to the nutrient tank last.
- SYSTEM-CLEAN may be used alone in water for a system flush between cycles.
- SYSTEM-CLEAN will not kill micro-life when diluted at 0.25 ml per 1L.



WHY IT ALL MATTERS

Nothing is more important than the quality and nutrition of our food supply. Modern society is disconnected from the production of the food we consume. Farm modernisation, soil mineral depletion, government regulation, urban sprawl and poor understanding of plant health are destroying the fabric of what allows us to live.

Urban Agriculture is a worldwide movement to bring the production of food closer to the point of consumption and give the power of true health back to the average person. While bringing food production closer to urban populations is necessary, it's not the complete solution.

We also must change how we grow our food. This means reintroducing biological farming techniques, using sustainable fertiliser and pest prevention programs and empowering individuals to produce a share of what they consume. By combining all these, we can reduce the strain on our worldwide food production system and increase the health of our citizens.

There is a direct and intimate connection between plants and humans. 100 percent of our nutrition is ultimately derived from plants which harvest the sun's energy and convert it into food for us. How we feed the plants we consume, determines the health and capabilities of our population. Using artificial chemicals and synthetic fertilisers makes plants sick, which makes us sick.

But it's not too late to change. With some education, effort and desire, we can make big changes together.



BENEFITS OF URBAN AGRICULTURE

- Grow your own vitamins and minerals
- Higher nutritional value and flavour of produce
- Grow your food the way nature intended
- Longer shelf life, less waste and spoilage
- Healthier plants, healthier people
- With proper education anyone can participate
- Know exactly what goes into the food that goes into you

Why APTUS Nutrients?

APTUS is at the forefront of the Urban Agriculture movement. We create and supply all-natural and organic plant nutrition products that allow you to grow your own food the way nature intended.

Our methods and technologies were invented by nature. We believe it is the best way to get the greatest results.

WHAT ARE MY IDEAL PPM/EC LEVELS?

There are a lot of factors such as strain, growing medium and fertiliser type, so it's impossible to give an exact number that works for every situation. APTUS boosters have a small effect on PPM/EC levels. This means your mixing habits may need to change. Always add FASILITOR to the clean water first, then your chosen CALMAG (MASSBOOST or MINERAL-CALMAG), then the booster(s), let mix and finally add BASE to your required EC level.

It's also best practice to adjust the pH before adding BASE as most pH UP and pH DOWN solutions will raise your EC. Most growers see better results at much lower EC levels than with their current fertiliser regimes. We recommend starting at 30 – 50% lower than most common EC levels. Check the feed schedule that best suits your method of cultivation for our recommended EC levels.

WHAT KIND OF WATER IS BEST WITH APTUS?

Bare minimum. You should use dechlorinated water since the levels of chlorine and chloramines in most tap water will kill micro-life. The water of choice for professional growers is reverse osmosis (RO) water. Captured rain water is also a good, clean source of water, but be sure to use an inline UV filter between the rain water tank and the reservoir to kill any bad pathogens that may be in the water. APTUS growers using these types of water report better results than those using tap / municipal water. If using RO or rain water, you may need to increase the dosage of your chosen CALMAG as noted on the product pages of MASSBOOST and MINERAL-CALMAG.

COMMON QUESTIONS

WHAT ELSE SHOULD I ADD IN ADDITION TO MY APTUS BASE AND BOOSTERS?

NOTHING! APTUS boosters are highly researched and precise in their formulations. Every ingredient has a specific purpose. Nothing is left out. If you add other products like sweeteners, microbial inoculants, synthetic bio-stimulants or other bloom boosters, there is a high chance of causing imbalance in your growing medium and plants. APTUS is complete nutrition for your garden. Most plant health issues occur when adding other 'bloom boosting' type products due to nutrient antagonism and imbalance.

WHAT'S THE FIRST PRODUCT I SHOULD TRY?

The 7 boosters in the APTUS Premium Collection are synergistic and work best when used together. They do, however, work well as stand-alone products and can be added to help enhance any existing feeding regimen:

FASILITOR - Strengthens plants and increases uptake and balance of nutrients.

STARTBOOST - Stimulates root and vegetative growth organically.

ECOZEN - The most powerful and concentrated multi-complex enzyme booster.

BLOOMBOOST - Terpene and flavonoid enhancer.

FINALEBOOST - Increases resin production and stimulates flower maturation.

BREAKOUT POWDER - Economical, stable and powerful flower enhancer.

WHY AM I GETTING TIP-BURN?

This is likely because of increased uptake of nutrients, especially salts. To fix, lower the dosage of BASE or other NPK fertiliser. FASILITOR and L-amino acids increase the bioavailability and uptake of other nutrients so you can use less and get the same (or better) results.

WHY DID MY FASILITOR TURN BLUE?

FASILITOR is an ultra-pure formulation manufactured under GMP (pharmaceutical-grade conditions), to maintain stability. It is a very light yellow colour when you first open the bottle. If it turns a light blue colour that means something contaminated the bottle after opening. But don't worry, FASILITOR is still effective but with a shorter shelf-life. You should always use clean and dry instruments for measuring (pipette, syringe, or pour). To minimise risk of contamination, never put a dirty measuring instrument into the bottle.

WHAT'S THE SHELF-LIFE OF APTUS?

3 years if stored properly in a cool, dark place. Don't freeze or heat any APTUS products. And always close the bottles tightly when not in use.

IS IT OKAY TO ADD COMPOST TEAS, INOCULANTS, OR BENEFICIALS?

Few growers analyse their soil for microbial content. Adding diverse beneficials (like bacteria and fungi) adds unknowns to the growing environment. Unknowns can create problems that are difficult to diagnose and fix. This is especially true with teas and products that contain additional nutrients and bio-stimulants (like guanos and kelps). They can often cause more harm than good. APTUS is complete, including high populations of specific beneficial bacteria, sugars and natural bio-stimulants.

Have another question or need help?

We want you to have a successful experience with APTUS! No matter the situation or question, always contact Aptus Tech Support to get the answers you need: info@aptusplanttech.com.au - or visit our website for more FAQs and education:

www.aptusplanttech.com.au