

BIONOVA

PREMIUM FERTILIZERS



A Fully Transparent Nutrient Catalog
Detailing What's Inside Our Products and Why



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PREMIUM FERTILIZERS



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THE POWER TO PERFORM



POWERFUL IMMUNITY
Undeclared Champ:
THE MISSING LINK



POWER YOUR FLOWER
Move Up a Weight Class with:
X-cel



EMPOWERING HEAVY YIELDS
Heavyweight Title Holder:
Si lution

Powerfully Concentrated Bio-Stimulators
for Insane Crop Performance and Yield!



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A MESSAGE FROM THE FOUNDER

"Even though I graduated as a mechanical engineer, I was always more interested in horticulture and more specifically, the biology behind growing plants. Because of this interest, I started growing at a young age, and within five years, I built my first greenhouse. At the end of the **70's and beginning of the 80's I started growing professionally after a couple of breeders from the US came to Holland** with indigenous plant genetics from North America. In those days, there were no professional nutrients available for specific crops. I took it upon myself to create a nutrient formula to achieve the best results and potencies with the continually evolving genetics.

The project completed in 1992 and we established Bionova in early 1993 with a team of passionate experts. **With pride I can guarantee that most of today's nutrient formulations were founded and developed back in the 90's after my team and I started crafting these formulations!** With Bionova, my main focus was and has always been to develop the best plant nutrient and stimulator concentrations from the highest quality ingredients.

With 30 years of experience and development, we have established product lines for any type of grower around the world, starting from the hobby grower to the large scale professional grower and everyone in between.

The focus with all our liquid and dry nutrients is to **obtain the highest possible concentration, as we**



want to offer the most cost-efficient nutrients possible!

All of our stimulators are crafted from the highest quality ingredients, meticulously sourced from around the world by the incredible Bionova team. The source elements we combine in our stimulators are unparalleled as compared to many competing nutrient lines we have analyzed. **After 30 years of research around the world I can make the BOLD statement that these industry leading stimulators are the best in the business.** Aside from our main product lines we also offer a line of mineral additives, universal products like pH controllers, as well as a line of substrates*.

Every day we continue to work on our passion to create the best quality nutrients and stimulators in the highest possible concentrations. **so you as a grower have the POWER TO PERFORM to your highest potential and produce the highest quality flower in the most cost-efficient way!**

This catalog contains all the information we are able to mention about our products. This is a complete open book of WHAT'S inside our products and WHY. **Enjoy reading about all the passion we have put in our products over the last 30 years!"**

For any questions or inquiries you can always contact me:

eric@bionova.nl

Office (Netherlands): +31 (0)416 65 00 82



Eric van Vlimmeren
Founder of Bionova

End 70's

Started growing professionally.

Early 80's

Started working on a nutrient formula.

1993

Established Bionova in 1993

2023

Declassifying Bionova's secrets – transparent product information!

*Bionova substrates are not included in this catalog. Please contact us for more information.

MY WAY TO GROW

MAIN FERTILIZERS



STIMULATORS



MINERALS



UNIVERSALS



Since the early 90's, Bionova has supplied a wide range of highly concentrated premium nutrients, stimulators, & universals for all growing and flowering crops. The most cost-effective nutrients in the world!



BIONOVA
PREMIUM FERTILIZERS

TABLE OF CONTENTS

Main Nutrients 2

Nutri Forte A+B	4
Coco Forte A+B	5
Soil Supermix	6

Stimulators 8

X-cel	10
The Missing Link	12
Sililution	14
PK 13-14	16
Roots	18
BN Zym	20
Vitasol	22

Mineral Additives 24

N 27	26
Micromix	27
P 20	28
K 20	29
Ca 15	30
MgO 10	31

Universals 32

Microlife	33
Profimix	34
pH-	35
pH+	35

Useful Tools 36

Basic Feedcharts	36
Professional Feedcharts	37
Strain Detail Form	38
Daily Activity Notes	39
Blank Nutrient Chart	43

Product information in this catalog is subject to change without notice.



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MAIN NUTRIENTS



MY WAY TO GROW



ONE & TWO PART NUTRIENTS WITH ALL MACRO & MICRO NUTRIENTS!

Bionova 2-Part A+B Nutrients

For better control when growing on a large scale we offer two-part nutrients in A+B form. Bionova Nutri Forte A+B and Coco Forte A+B are the most cost-effective nutrients with the highest possible liquid concentration. With a dilution ratio of 1:600 you are getting the most bang for your buck! You are not buying water!

2 options for A+B nutrients:

- (Hydro Cultivation) Nutri Forte A+B
- (Coco Cultivation) Coco Forte A+B

These products contain extremely low levels of ballast salts to prevent blockages in drip systems and are very low in heavy metals for a cleaner crop.

These A+B combinations contain all food grade minerals and trace elements for rapid growth and abundant flowering. As opposed to lower grade minerals, plants directly absorb all food grade minerals which gives you optimal control and performance of your plants. Take back control of your plants with Bionova nutrients!

Bionova All-In-One Soil Supermix

We have created an all-in-one soil nutrient that makes cultivating more user friendly. Instead of mixing two components you are just mixing one. It doesn't get any easier than that! Bionova Soil Supermix contains food-grade minerals and the perfect balance of macro & micronutrients for an optimal result on any crop.

Food-grade minerals are the purest form of minerals for a plant nutrient. Above food-grade minerals there are pharmaceutical grade minerals which are used for human application. Food-grade minerals are directly plant available, which gives you the optimal control of your cultivation.



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Extremely Concentrated 2-Part Hydro Nutrients



1:600

**A: NPK
8-0-0**

**B: NPK
0-6-12**

WHY?

High concentration makes Bionova nutrients the most cost-effective nutrients on the market!

Developed specifically for the most effective absorption of necessary elements

For optimal growth and flowering in hydroponic applications such as rockwool, clay pebbles etc.

The trace elements are chelated (EDTA) so they can be absorbed within a larger pH-range

What is Nutri Forte A+B?

Nutri Forte A+B is the most cost-effective solution for cultivation in Hydroponics on any artificial substrate such as rockwool, mapito, clay pebbles etc. This product contains extremely low levels of ballast salts to prevent blockages in drip systems and is very low in heavy metals to have a pure end product grown with minerals. Our formulation contains all necessary food grade minerals and trace elements for rapid growth and abundant flowering. Plants directly absorb all food grade minerals which gives you optimal control and performance of your plants. Nutri Forte A must be used in combination with Nutri Forte B.

When to use Nutri Forte A+B?

Nutri Forte A+B can be used from the first week of veg until 1 week before harvest. **Nutri Forte A+B can be used in conjunction with all Bionova stimulators, minerals, universals & substrates.**

How to use Nutri Forte A+B?

Application in Irrigation

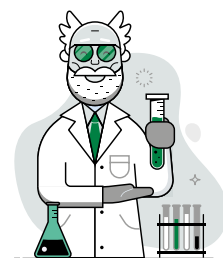
Shake well and add 3.5 - 7 ml per gallon every time you prepare your nutrient solution. Use this solution each time the plants are irrigated until 1 week before harvest. Flushing is mandatory.

Application as a Foliar Spray

Cannot be used as a foliar spray.

A WORD FROM OUR FOUNDER:

Developed in 1995 with the highest concentration in the market! The chelated trace elements in Nutri Forte are absorbable in a wide pH range and are immediately plant available for direct effect.



Suitable for cultivation methods:



Available in Sizes:

250 ml

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

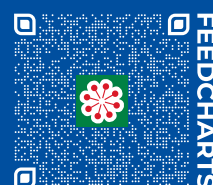
GUARANTEED ANALYSIS

EC Nutrient - Calcium Nitrate Solution 8 (9) NPK 8-0-0 + 9.5 CaO + 4% MgO

8% Total Nitrogen (N) of which: 8% is Nitric Nitrogen (N)
9.5% Calcium oxide (CaO), water soluble
4% Magnesium oxide (MgO), water soluble.

Solution of PK Nutrients 0-6-12

6.5% Phosphorus pentoxide (P₂O₅), water soluble
12% Potassium oxide (K₂O), water soluble
4% Sulfur trioxide (SO₃), water soluble.



FEEDCHARTS



Extremely Concentrated 2-Part Coco Nutrients

WHY?

High concentration makes Bionova nutrients the most cost-effective nutrients on the market!

Optimal growth and flowering when using coco fiber substrate

Very low in ballast salts and heavy metals

All food grade minerals are directly plant available

What is Coco Forte A+B?

Coco Forte A+B is the most cost-effective solution for cultivation on any Coco fiber substrate. Due to the short buffering in the coco substrates, this concentrated Coco Forte A+B combination is specially formulated for the most effective absorption of all necessary elements. Our formulation contains all the food grade minerals and trace elements for a rapid growth and abundant flowering. Plants directly absorb all food grade minerals which gives you optimal control and performance of your plants. Coco Forte A+B is developed with a trace amounts of ballast salts and heavy metals, which prevents blockage in drip systems resulting in cleaner flower and less maintenance labor. Coco Forte A must be used in combination with Coco Forte B.

When to use Coco Forte A+B?

Coco Forte A+B can be used from the first week of veg until 1 week before harvest. **Coco Forte A+B can be used in conjunction with all Bionova stimulators, minerals, universals & substrates.**

How to use Coco Forte A+B?

Application in Irrigation

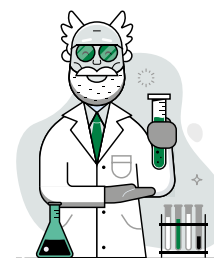
Shake well and add 3.5-7 ml per gallon every time you prepare your nutrients solution. Use this solution each time the plants are irrigated until 1 week before harvest. Flushing is mandatory.

Application as a Foliar Spray

Cannot be used as a foliar spray.

A WORD FROM OUR FOUNDER:

The most concentrated coco nutrient is enriched with 11.5% calcium to enhance nutrient uptake. 0.4 ml of Coco Forte A+B in 1 gallon of water will increase the EC by 0.1.



Suitable for cultivation methods:



Available in Sizes:

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

GUARANTEED ANALYSIS

EC Nutrient - Calcium Nitrate Solution 8 (11)

NPK 8-0-0 + 11,5% CaO + 3% MgO

8% Total Nitrogen (N) of which: 8% Nitric Nitrogen (N)

11.5% Calcium oxide (CaO), water soluble

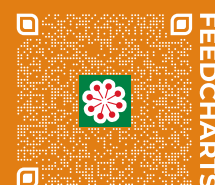
3% Magnesium oxide (MgO), water soluble.

Solution of PK Nutrients 0-6-12

6.5% Phosphorus pentoxide (P₂O₅), water soluble

12% Potassium oxide (K₂O), water soluble

4% Sulfur trioxide (SO₃), water soluble



FEEDCHARTS



Highly Concentrated All-in-One Soil Nutrient

WHY?

All-in-one nutrient for veg and flower

Combination of natural & food grade minerals

Very low in heavy metals

Perfectly pH balanced

1:400

NPK
7-3-6

What is Soil Supermix?

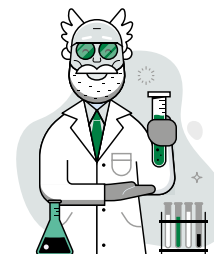
Soil Supermix is an all-in-one main nutrient for soil substrates, specially formulated for the entire veg and bloom cycle. This perfectly balanced product contains chelated trace elements and food grade minerals. This unique mixture of ingredients ensures a rapid growth and abundant flowering. Plants directly absorb all food grade minerals which gives you optimal control and performance of your plants. For optimum results, it is important to apply PK 13-14 with Soil Supermix as a flowering stimulator during the entire flowering period.

When to use Soil Supermix?

Soil Supermix can be used from the first week of veg until 1 week before harvest. **Soil Supermix can be used in conjunction with all Bionova stimulators, minerals, universals & substrates.**

A WORD FROM OUR FOUNDER:

The first all-in-one main nutrient in the world, established in 1993! Compared to A+B, this world changing nutrient has all required elements in one bottle! Growing doesn't get easier than this!



How to use Soil Supermix?

Application in Irrigation

Shake well and add 5-10 ml per gallon every time you prepare your nutrients solution. Use this solution each time the plants are irrigated until 1 week before harvest. Flushing is mandatory.

Application as a Foliar Spray

Cannot be used as a foliar spray.

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation

GUARANTEED ANALYSIS

EC Nutrient - Solution of NPK Nutrients 7-3-6

7% Total Nitrogen (N), of which:
 2% Ammoniacal Nitrogen (N)
 4% Nitric Nitrogen (N)
 1% Organic Nitrogen, plant origin (N)
 3% Phosphorus pentoxide (P₂O₅), water soluble
 6% Potassium oxide (K₂O), water soluble.

Available in Sizes:

250 ml

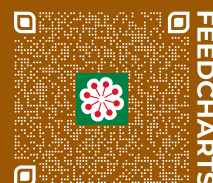
1 liter

5 liters

20 Liters

200 Liters

1000 Liters



FEEDCHARTS

Soil Supermix should be used with PK 13-14



WHY?

Prompts and supports the bloom cycle

Helps promote vibrant flowering

Increases yield quality and end-weight

The ideal compliment to Soil Supermix!

What is PK 13-14?

PK 13-14 is the perfect balanced combination of Phosphorus and Potassium. This mixture strongly supports the bloom cycle, prompts flowering, and creates vibrant flowers. It is sourced with food-grade minerals, (the purest forms of minerals for plants) and contains only trace amounts of ballast salts and heavy metals. This allows PK 13-14 to be directly absorbed by the root system while no heavy metals will remain in the flower. PK 13-14 should always be used in combination with Soil Supermix.

Why Phosphorus?

Phosphorus initiates the transformation of nitrogen into amino acids, and it is the trigger that converts sunlight into carbohydrates. This element is most in need during transitional periods in plants growth, such as the end of vegetative cycle and the beginning of the bloom cycle.

Why Potassium?

When plants begin to flower, potassium is a catalyst in the manufacture and delivery of the starches and sugars needed for the blossoms to fully form.

A WORD FROM OUR FOUNDER:

Phosphorus and Potassium are highly beneficial to plants. Read more about the benefits of using PK 13-14 on page 17.



Available in Sizes:

250 ml

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Spray



Hydro Aero

STIMULATORS



MY WAY TO GROW



INDUSTRY LEADING STIMULATORS

Why?

- Powerful bio-stims for optimal performance
- Highest standard ingredients
- Brewed and blended in house for the Best Quality Control
- Sourced around the globe from the best sources our planet has to offer
- 30+ years' experience in comparing sources – we pick only the best!
- Highly concentrated blends
- Most cost effective in the market
- All stimulators are 100% vegan
- Control Union certified

Results?

- Improved yield and quality
- More dry-weight content
- Higher immune system
- Improved terpene profile
- Brings the flavor back to your flowers
- Mouthwatering flavor

Industry leading Bio-Stimulators - Why?

It doesn't get any better than this - Bionova's Bio-stimulators give you and your crop the power to perform! We only blend the best natural ingredients from around the globe into our Stimulators. We only pick the finest sources to ensure only the best quality possible in our stimulators.

The founders of Bionova and the team of biologists and agronomists have established a line of highly concentrated blends, which are constantly evaluated against new sources and products to keep them current and up to date. We've aimed each day for the highest standards in quality, since 1993!

Bionova stimulators are developed to improve the general health, vitality, and growth of plants. Our products will protect your grow against infections and various fungi, helping to ensure the maximum return on investment from your crop no matter what type of plants you cultivate!

Ours are the most cost-efficient bio-stimulators on the market. Treat your crop with Bionova stimulators to realize harvests you have never experienced before! These various stimulators were developed for you to explore and maximize your crop's potential and genetic expression. Are you ready to be blown away by the results?

Because Bionova Stimulators are quite intricate, we have prepared a spread for each one with a technical page explaining exactly which ingredients we have used and what each individual ingredient does. We have also included a guaranteed analysis for each product.



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Excellent Grow + Bloom Stimulator



WHY?

Significantly increases yield quantity and quality of any treated crop

The combination of amino acids actively stimulates hormone balance

More dry weight of the end-product

Natural extract stimulates plant metabolism, (photosynthesis in particular) and consequently carbohydrate formation

What is X-cel?

X-cel is a natural/vegan stimulator. The sophisticated combination of components stimulates the bio-chemical functions on all levels. The natural extracts stimulate the metabolism, in particular the photosynthesis, and consequently the forming of carbohydrates. The hormone balance of the crop is actively stimulated by the combination of amino acids inside X-cel.

When to use X-cel?

Use X-cel from the first week of veg until the final week of bloom. **X-cel can be used in conjunction with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use X-cel?

Application in Irrigation

Shake well and add 2-4 ml per gallon every time you prepare your nutrients solution. Use this solution each time the plants are irrigated during the entire cultivation period.

Application as a Foliar Spray

Mix X-cel, TML and Silution as a foliar spray in the vegetative phase for maximum result! Start by mixing 5.75 ml Silution in 1 gallon of water. Let it settle for a minimum of 30 minutes so it can stabilize. Proceed to mix in 9.5 ml X-cel and 9.5 ml TML. You are now ready for the best possible results!

A WORD FROM OUR FOUNDER:

We found a revolutionary stimulator whilst crafting our famous X-cel. We were amazed that harvests can significantly improve with a bio-stimulator and our X-cel still amazes growers around the world.



Suitable for cultivation methods:



GUARANTEED ANALYSIS

Natural Soil Enhancer NPK 1-0-0

1% Total Nitrogen (N) of which:
1% Organic Nitrogen (N), plant origin.
Also contains:
Kelp, Humic Acid, Amino Acids.

Available in Sizes:

250 ml

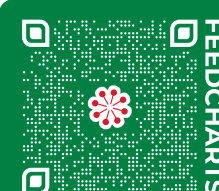
1 liter

5 liters

20 Liters

200 Liters

1000 Liters



What's Inside?



VITAMINS

Biotin, Carotenes, Choline, Folic acid, Folinic acid, Niacin, Riboflavin, Tocopherol:

- ▶ Beneficial effect on plant fitness as it protects plants against abiotic stress conditions such as salinity, drought, heat, metal toxicity, ozone, and UV radiation.
- ▶ Contribute to photosynthesis.
- ▶ Enhances adventitious root formation.
- ▶ Regulates a plant's metabolic functions. Helps plants to grow more heavily and healthily.
- ▶ Riboflavin is required for normal plant growth and development.

AMINO ACIDS+

Amino Acids, Humic Acids and Yucca Extract:



- ▶ Higher absorption of nutrients and minerals.
- ▶ Improved distribution and increased efficacy of nutrients and crop protection products.
- ▶ Chelating and strengthening effect of applied trace elements.
- ▶ Better water absorption and reduction of dry spots in the soil.
- ▶ Stimulation of beneficial soil bacteria resulting in faster root growth.



LAMINARIALES

Kelp:

- ▶ Helps germinate seeds quicker.
- ▶ Improves taking of cuttings.
- ▶ Encourages faster rooting.
- ▶ Produce more and larger buds & flowers.
- ▶ Adds more color and flavor.
- ▶ High levels of cytokinins.
- ▶ Builds plant immunity.
- ▶ Counters nutrient deficiencies.
- ▶ Helps plants fight off insects and disease.
- ▶ Provides a longer shelf life.

NATURAL ACIDS

Aspartic acid, Alginate acid, Butyric acid, Citric acid, Lactic acid:



- ▶ Produce the amino acids lysine, threonine, methionine, and isoleucine.
- ▶ Moisture retention during dry periods.
- ▶ Alginate acid in the soil encourages beneficial bacterial growth.
- ▶ Promotes growth and development of roots, flowers and fruits.
- ▶ Aiding the Krebs's Cycle, better photosynthesis.
- ▶ Promoted plant growth and biomass by increasing the chlorophyll content.



ENZYMES

Desmolase, Hydrolase, Lyases, Transferase:

- ▶ Plays a significant role in cellular respiration and in fermentation.
- ▶ Degrades the fungal cell-wall.
- ▶ Catalyze the breaking a chemical bond between two parts of a molecule.
- ▶ Play an important role in the protection of plant tissues from pest and pathogen attack.
- ▶ Protease inhibitors are indispensable for the growth and development of the organism.

VEG STIMULATORS

Adenine, Auxin (IAA, ABA), Betaines, Tripeptide glutation:



- ▶ Orchestrating cell division, differentiation and elongation.
- ▶ Supports embryonic development, root and stem tropisms and transition to flowering.
- ▶ Improves growth and survival of plants counteracting metabolic dysfunctions.
- ▶ They can stimulate both the differentiation and the outgrowth of axillary buds.



Premium Green Plants



WHY?

A product unique to Bionova! The Missing piece of the puzzle!

Utilizing the best and most pure ingredients in the world for the ultimate immune system

Fully rounds out plant nutrition

If you don't use The Missing Link, your plants are not reaching their full potential!

What is The Missing Link?

The Missing Link is a 100% natural/vegan stimulator. The world's best quality natural polymer extracted from humus creates the ultimate immune system. This ultimate immune system significantly decreases the effects of stress factors. This will allow the plant to achieve its full harvest potency with compact and vital growth. This cuts down the need for pesticides/fungicides. The Missing Link is an exclusive Bionova product for premium green plants!

When to use The Missing Link?

The Missing Link can be used from the first week of veg until the final week of bloom. **TML can be used in conjunction with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use The Missing Link?

Application in Irrigation

Continuously 2-4 ml per gallon of water, from first day until the end.

Application as a Foliar Spray

During growth and first week flowering, use 19 ml per gallon. Use max 3 times.

A WORD FROM OUR FOUNDER:

One of my favorite Bionova products! I am proud to have sourced the best quality humic substance in the world - a 75-million-year-old source of plant materials and hundreds of indispensable elements! TML is the missing link to your next level harvests!



Suitable for cultivation methods:



Available in Sizes:

250 ml

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

GUARANTEED ANALYSIS

Colloidal Mix of Humic Substances

0.15% Total Nitrogen (N) of which:

0.15% as Ammoniacal Nitrogen (N)

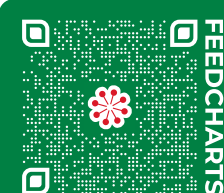
With micro-nutrients:

0.037% Iron (Fe), water soluble, DTPA chelated.

0.001% Manganese (Mn), water soluble, EDTA chelated.

0.002% Boron (B)

Contains: 1.25% Natural Polymer Extracted from Humus.



What's Inside?



AMINO ACIDS

Proline, Glycine, Hydroxyproline, Alanine, Arginine, Lysine, Glutamine:

- ▶ Proline - protects the plants from various stresses and also helps plants to recover from stress more rapidly.
- ▶ Glycine - often used for production of a wide range of amino chelate nutrients.
- ▶ Hydroxyproline - provides structural integrity to mediating cell-cell interactions and communication.
- ▶ Alanine - a defense compound that enables plants to withstand various stresses such as hypoxia, waterlogging and drought, and indirectly as a precursor to the compounds pantothenate and CoA.
- ▶ Arginine - a major storage and transport form for organic nitrogen in plants.
- ▶ Lysine - an important signaling amino acid that regulates plant growth and responses to the environment.



TRACE ELEMENTS

Iron (Fe), Manganese (Mn), Boron (B), Sulfur (S):

- ▶ Iron - many of the vital functions of the plant, like enzyme and chlorophyll production, nitrogen fixing, and development and metabolism are all dependent on iron.
- ▶ Manganese - a metal that is an essential cofactor for the oxygen-evolving complex (OEC) of the photosynthetic machinery, catalyzing the water-splitting reaction in photosystem II.
- ▶ Boron - mainly involved in cell wall synthesis and structural integration.
- ▶ Sulfur - an important component of enzymes and other proteins, sulfur is necessary for the formation of chlorophyll. It promotes cell division, root development and flower formation.

HUMIC SUBSTANCE

Natural Polymer Extracted From Humus:



- ▶ This ingredient is one of the components of humus and arises during the digestion of plants by micro-organisms. It is a substance with many positive effects on plant and substrate health. For example, it mobilizes nutrients to and within plants.
- ▶ Iron and magnesium ions are indispensable for photosynthesis, and this polymer promotes the function of transporting those ions in the soil into plant cells by a chelating effect, thereby leading to activation of photosynthesis.
- ▶ This ingredient also plays an essential role in nature in mobilizing minerals and making all kinds of compounds to help plants absorb nutrients.

PLEASE NOTE: This humic substance is not shown on the product label because state registration agencies won't allow it to be listed as an ingredient.
We promise it's in there!



Boost Your Plant's Immune System!



1:5000

The Solution for the Highest Yield!

WHY?

The only bio-stabilized mono-silicic acid enriched with world class natural polymers extracted from humus

Bionova world patented formula

Guaranteed mono-silicic acid

Bigger, denser flowers and thicker, sturdier stalks

What is Silution?

The effectiveness of Silution in strengthening the plant and stimulating growth and flowering is particularly visible in less than ideal growing conditions such as warm climates and/or conditions with high risk of infection. Even though silicon can be found in the soil almost everywhere on earth, it is usually not plant available. Most substrates do not contain plant available silicon. The mono-silicic acid in Silution is the only form of silicon that is 100% bio-available to the roots.

When to use Silution?

Silution can be used from the first week of veg until the final week of bloom. **Silution can be used in conjunction with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use Silution?

After adding water to the tank, add the correct amount of Silution and mix thoroughly. After this add the normal dosage of other nutrients and stimulators and mix thoroughly again.

Application in Irrigation

First mix 0.75 ml per gallon of water, mix thoroughly. And then add all other nutrients and stimulators.

Application as a Foliar Spray

Spray Silution from start growing phase until the end of the growing phase to promote the amount of internodes, which results in more harvest. Mix 7.5 ml per gallon of water.

A WORD FROM OUR FOUNDER:

The solution for the ultimate harvest, the combination of our Mono-silicic Acid and our natural polymer extracted from humus makes this the most plant available form of silica there is! When applying Silution you obtain next level harvests.



Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Spray



Hydro Aero

GUARANTEED ANALYSIS

EC Nutrient

Mixture of micro-nutrients Boron and Zinc.

Micro-nutrients percentage by weight:

0.6% Boron (B) water soluble:

1.4% Zinc (Zn), water soluble, EDTA chelated.

Also contains: 1.45% Silicon Dioxide $\text{Si}(\text{OH})_4$

Contains: 1.1% Natural Polymer Extracted from Humus.

Available in Sizes:

250 ml

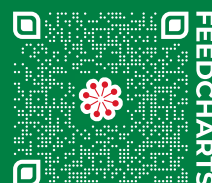
1 liter

5 liters

20 Liters

200 Liters

1000 Liters



What's Inside?



MONO-SILICIC ACID

Silicon (Si) as Si(OH)_4 :

- It has been found to improve drought tolerance and delay wilting in certain crops where irrigation is withheld and will enhance the plant's ability to resist drought and other metal toxicities.
- Promotes strengthening of the cell walls and provides increased mechanical support to the aerial parts.

TRACE ELEMENTS

Boron (B), Zinc (Zn):

- Boron, mainly involved in cell wall synthesis and structural integration. Boron plays a key role in a diverse range of plant functions including cell wall formation and stability, maintenance of structural and functional integrity of biological membranes, movement of sugar or energy into growing parts of plants, and pollination and seed set.
- Zinc helps the plant produce chlorophyll. Zinc is an important component of various enzymes that are responsible for driving many metabolic reactions in all crops. Growth and development would stop if specific enzymes were not present in plant tissue. Carbohydrate, protein, and chlorophyll formation is significantly reduced in zinc-deficient plants.

HUMIC SUBSTANCE

Natural Polymer Extracted From Humus:

- This ingredient is one of the components of humus and arises during the digestion of plants by micro-organisms. It is a substance with many positive effects on plant and substrate health. For example, it mobilizes nutrients to and within plants.
- Iron and magnesium ions are indispensable for photosynthesis, and this polymer promotes the function of transporting those ions in the soil into plant cells by a chelating effect, thereby leading to activation of photosynthesis.
- This ingredient also plays an essential role in nature in mobilizing minerals and making all kinds of compounds to help plants absorb nutrients.

PLEASE NOTE: This humic substance is not shown on the product label because state registration agencies won't allow it to be listed as an ingredient.
We promise it's in there!



The Most Plant Available Silica in the World!

The Original PK 13-14



1:1500

NPK
0-13-14

WHY?

Significantly increases yield quantity and quality of any treated crop

Contains only trace amounts ballast salts and heavy metals

More dry weight of the end-product

The perfect balanced combination of Phosphorus and Potassium

What is PK 13-14?

PK 13-14 is the perfect balanced combination of Phosphorus and Potassium. Phosphorus activates the bloom cycle inside any treated plant and Potassium helps promote vibrant flowering. It is sourced with food-grade minerals, (the purest forms of minerals for plants) and contains only trace amounts of ballast salts and heavy metals. This allows PK 13-14 to be directly absorbed by the root system while no heavy metals will remain in the flower. PK 13-14 should always be used in combination with Soil Supermix.

When to use PK 13-14?

Use PK 13-14 from the first week of flower until the final week of flower. **PK 13-14 can be used in conjunction with all Bionova nutrients, stimulators, minerals, universals & substrates.**

A WORD FROM OUR FOUNDER:

Established in 1993 Bionova was the original inventor of the perfect Phosphorus Potassium balance - The PK 13-14! This balance is now well known world-wide as THE perfect balance to promote the bloom cycle!



Tips From the Growers

Deficiencies often occur due to poor quality substrate and/or improper nutrient pH. To cure deficient plants, you can apply a solution of PK 13-14 by irrigation or foliar spray.

How to use PK 13-14?

Application in Irrigation

Shake well and add 0.75-2 ml per gallon every time you prepare your nutrients solution. Use this solution each time the plants are irrigated during the entire flowering period.

Application as a Foliar Spray

Mix 1-2 ml per gallon of water.

Suitable for cultivation methods:



Outdoor

Indoor

Vegetative

Flowering

Irrigation

Spray

Hydro Aero

GUARANTEED ANALYSIS

EC Fertilizer Solution of PK Nutrients 0-13-14

13% Phosphorus pentoxide (P_2O_5), water soluble
14% Potassium oxide (K_2O), water soluble

Available in Sizes:

250 ml

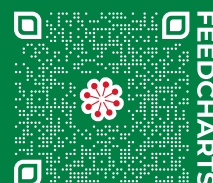
1 liter

5 liters

20 Liters

200 Liters

1000 Liters



FEEDCHARTS

What's Inside?



PHOSPHORUS

Non-Metal Element:

- ▶ The function of phosphorus in plants is very important. It helps a plant convert other nutrients into usable building blocks with which to grow. Phosphorus is one of the main three elements most commonly found in nutrients and is the "P" in the NPK balance that is listed on nutrients.
- ▶ Phosphorus is like a power station within plants, playing a role in every process that involves energy transfer from one function to another. These energy transfers include growing roots or forming flowers and fruit.
- ▶ Phosphorus initiates the transformation of nitrogen into amino acids, and it is the trigger that converts sunlight into carbohydrates. This element is most in need during transitional periods in plants growth, such as the end of vegetative growth and the beginning of the flowering stage.



IDEAL PAIRING

P + K:



The perfect combination for when your plants are in flower!

- ▶ Bionova is the inventor of the original composition: PK 13-14. A must use additive.
- ▶ Bionova PK 13-14 has a higher concentration compared to most of our competitors!
- ▶ Bionova PK 13-14 is made from the highest quality food-grade minerals. Ensuring that our PK 13-14 is plant available within hours which gives you optimal control of your plants.

BLOOM STIMULATORS

Adenine, Auxin (IAA, ABA),
Betaines, Tripeptide glutation:



- ▶ Orchestrating cell division, differentiation and elongation, embryonic development, root and stem tropisms and transition to flowering.
- ▶ Improves growth and survival of plants counteracting metabolic dysfunctions.
- ▶ They can stimulate both the differentiation and the outgrowth of axillary buds.



POTASSIUM

Essential Element:

- ▶ Is associated with the movement of water, nutrients, and carbohydrates in plant tissue. It's involved with enzyme activation within the plant, which affects protein, starch, and adenosine triphosphate (ATP) production. The production of ATP can regulate the rate of photosynthesis.
- ▶ Plants "breathe" carbon dioxide through tiny pores in the leaves known as stomata. When potassium moves into the cells around the stomata, the cells collect water and swell, allowing the pores to open and CO2 to enter. When water supplies are less than optimal, the potassium in the cells around the stomata recedes, closing the pores to prevent water loss and minimizing drought stress.
- ▶ When plants begin to flower, potassium is a catalyst in the manufacture and delivery of the starches and sugars needed for the blossoms to fully form.



Thicker Fruits & Flowers!

More Roots, More Flowers



WHY?

Most efficient Roots stimulator on the market because of its high concentration

Crucial for rapid root development in young plants

Helps plants develop more root hairs, increasing the root surface area for improved nutrient uptake

Plants will be more resilient to stress due to a stronger developed root system

What is Roots?

Healthy Roots, Healthy Shoots! Bionova Roots has been researched and produced in conjunction with several European horticultural companies and universities worldwide. This stimulator consists of more than 12 natural ingredients to ensure a rapid, abundant and strong Root system. Bionova Roots consists of the following main ingredients: Humic-acids, Kelp, Ascorbic-acid (vitamin C), Thiamin (vitamin B1), Myo-inositol (vitamin B7), and L-glycine (an amino acid). The next page explains the function of each ingredient.

When to use Roots?

Roots can be used from the first week of growth up to 3 consecutive weeks after first application. **Roots can be used in conjunction with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use Roots?

Application in Irrigation

Use Roots 3 consecutive weeks from the first moment you start your grow in dilution rate 2-3 ml per gallon of water.

Application as a Foliar Spray

Cannot be used as a foliar spray.

A WORD FROM OUR FOUNDER:

In the 90s Bionova collaborated with a University in the USA to source the right natural elements to develop a natural biological Root stimulator.



Tips From the Growers

The root system is where essential nutrients are absorbed and distributed to the rest of the plant. Growers who focus on promoting and maintaining a healthy root system are more likely to have fewer problems and larger yields each grow cycle.

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Hydro Aero

GUARANTEED ANALYSIS

Soil Improver

1% Total Nitrogen (N) of which:
 1% Organic Nitrogen (N), plant origin.
 0.15% Sodium (Na)
 With micro-nutrients:
 0.081% Manganese (Mn), water soluble, EDTA chelated.
 0.001% Molybdenum (Mo)
 Also contains:
 Kelp extract; Ascorbic Acid; Thiamine; Inositol; Glycine.

Available in Sizes:

250 ml

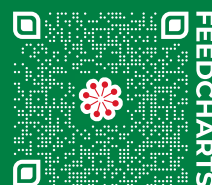
1 liter

5 liters

20 Liters

200 Liters

1000 Liters



FEEDCHARTS

What's Inside?



NATURAL ACID

Humic Acid:

- ▶ Humic acids are an excellent natural way to provide plants and soil with a concentrated dose of essential nutrients, vitamins, and trace elements.
- ▶ Humic acids are the substances that coagulate when the strong-base extract is acidified while fulvic acids (another natural polymer extracted from humus) are the organic substances that remain soluble when the strong-base extract is acidified.
- ▶ Humic acids chemically change the fixation properties of the soil, with benefits such as: neutralizes both acid and alkaline soils; regulates the pH-value of soils. Improves and optimizes the uptake of nutrients and water by plants. Increases buffering properties of soil.



VITAMINS

Ascorbic Acid (Vitamin C):



- ▶ L-Ascorbic acid (vitamin C) is as essential to plants as it is to animals. Ascorbic acid functions as a major redox buffer and as a cofactor for enzymes involved in regulating photosynthesis, hormone biosynthesis, and regenerating other antioxidants.
- ▶ It has proposed functions in photosynthesis as an enzyme cofactor (including synthesis of ethylene, gibberellins, and anthocyanins) and in control of cell growth.

VITAMINS

Thiamine (Vitamin B):



- ▶ In plants, thiamine is known to have its role as a cofactor for important metabolic activities [8]. Thiamine is known to be an essential regulator that plays an important role in plant's primary regulatory system.
- ▶ Role of thiamine in plant protection. In plants, thiamine plays a role as a response molecule towards abiotic and biotic stresses.



LAMINARIALES

Kelp:

- ▶ Helps germinate seeds quicker.
- ▶ Improves taking of cuttings.
- ▶ Encourages faster rooting.
- ▶ Produce more and larger buds & flowers.
- ▶ Adds more color and flavor.
- ▶ High levels of cytokinins.
- ▶ Builds plant immunity.
- ▶ Counters nutrient deficiencies.
- ▶ Helps plants fight off insects and disease.
- ▶ Provides a longer shelf life.

Rapid Root Development



The Substrate Energizer



WHY?

Bionova Zym is a natural bio-catalyst

Stimulates the water-retaining ability of every medium and decreases the soil-tension of water

BN-Zym brings more oxygen into your substrate

Speeds up the flushing process from 2 weeks to 4 days!

What is BN-Zym?

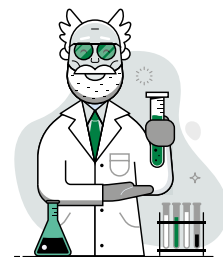
BN-Zym brings an increased bacteria activity, which converts nutrients and minerals in your substrate into material that is directly absorbable by the roots. BN-Zym catalyzes the waste matters and delivers them back to the crop in the form of absorbable nutrients. Moreover, the medium stays clean and free of all sorts of excess components. This is important for every cultivation and especially for those that re-use their Soil and Coco substrates.

When to use BN-Zym?

BN-Zym can be used from the first week of veg until the final week of bloom. **BN-Zym can be used in conjunction with all Bionova nutrients, stimulators, minerals, universals & substrates.**

A WORD FROM OUR FOUNDER:

An indispensable element in nature and the human body. Accelerates many processes and conversions, without changing itself. The effect therefore continues, which is truly unique.



Tips From the Growers

To make the most of your enzyme solution, you'll want to apply it directly to the soil. Remember, beneficial enzymes reside in the soil around your plant's root system.

How to use BN-Zym?

Application in Irrigation

Continuously 2-4 ml per gallon of water.

Application as a Foliar Spray

Cannot be used as foliar spray.

Suitable for cultivation methods:



Outdoor

Indoor

Vegetative

Flowering

Irrigation

Hydro Aero

GUARANTEED ANALYSIS

Soil Enhancer

0.5% Phosphorus pentoxide (P_2O_5)

0.27% Potassium Oxide (K_2O)

Also contains: pectinase, amylase, cellulase.

All enzymes used are free from animal substances.

Available in Sizes:

250 ml

1 liter

5 liters

20 Liters

200 Liters

1000 Liters



What's Inside?



ENZYMES

Xylanase:

- ▶ Thriving on plant sources for the degradation of plant matter into usable nutrients.
- ▶ Degrades the linear polysaccharide xylan into xylose, thus breaking down hemicellulose, one of the major components of plant cell walls.



ENZYMES

Beta-Glucanase:

- ▶ Plays key roles in cell division, trafficking of materials through plasmodesmata, in withstanding abiotic stresses and are involved in flower formation through to seed maturation.
- ▶ Commonly known as athogenesis-related (PR) proteins, play an important role not only in plant defense against fungal pathogens but also in plant physiological and developmental processes.



ENZYMES

Cellulase:



- ▶ Cellulase enzymes are used to break down the cellulose of plant cell walls into simple sugars that can be transformed (fermented) by microbes to fuels, primarily ethanol, as well as to chemicals, plastics, fibers, detergents, pharmaceuticals, and many other products.
- ▶ Plays a major role in the global carbon cycle by degrading insoluble cellulose to soluble sugars.
- ▶ Cellulases are used to degrade the cell wall and obtain protoplasts. Cellulases are synthesized by certain microorganisms (bacteria, fungi, protozoa).



Healthier Substrate

Mother Nature's Candy



1:1000

NPK
3-0-6

WHY?

Develops a sweeter taste in any crop

100% natural sugar in Vitasol gives you Mother Nature's Candy!

Vitasol increases the uptake of sugars

Vitasol supports crops experiencing abnormally rapid or stagnated growth

What is Vitasol?

This fruit sweetener contains natural sugars. Calcium, Magnesium, Copper, Lime, Potassium, vitamins, and a great number of vegan trace elements. Vitasol is extremely suitable as a converter of available nutrients - especially during periods of high production and rapid growth (in case of artificially lit crops). For crops experiencing stagnation in growth due to nutrient deficiencies, the use of Vitasol will provide more carbohydrates (energy) during bloom.

When to use Vitasol?

Use Vitasol as a sweetener during the last 5 weeks of bloom all the way through final flush. **Vitasol can be used in conjunction with all Bionova nutrients, stimulators, minerals, universals & substrates.**

A WORD FROM OUR FOUNDER:

When I first tasted a product with Vitasol, I was amazed by the smell and flavors. Today I can't live without the additive of Vitasol in any crop. The sweetness will convince you!



Tips From the Growers

Molasses helps feed existing microbes in the substrate. You can give an extra punch to your preparation by adding rhizobacteria as well. This type of bacteria does a world of good by helping free up nutrients and combating pathogens.

How to use Vitasol?

Application in Irrigation

Shake well and add 1.5-4 ml per gallon every time you prepare your nutrients solution. Use this solution each time the plants are irrigated during the final weeks of flowering. You can also use Vitasol as a micro-organism boost at 1-2 ml per gallon.

Application as a Foliar Spray

Cannot be used as foliar spray.

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Hydro Aero

GUARANTEED ANALYSIS

Combination Nutrient NPK 3-0-6

3% Total Nitrogen (N)

3% Organic Nitrogen from amino acids and vinasse

6% Total Potassium oxide (K₂O) water soluble

Available in Sizes:

250 ml

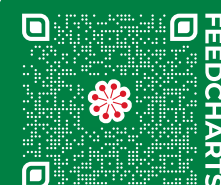
1 liter

5 liters

20 Liters

200 Liters

1000 Liters



FEEDCHARTS

What's Inside?



TRACE ELEMENTS

Boron (B), Copper (Cu), Iron (Fe), Manganese (Mg), Zinc (Zn):

- ▶ Boron, mainly involved in cell wall synthesis and structural integration.
- ▶ Copper is required for many enzymatic activities in plants and for chlorophyll and seed production.
- ▶ Iron, many of the vital functions of the plant, like enzyme and chlorophyll production, nitrogen fixing, and development and metabolism are all dependent on iron.
- ▶ Manganese, a metal that is an essential cofactor for the oxygen-evolving complex (OEC) of the photosynthetic machinery, catalyzing the water-splitting reaction in photosystem II.
- ▶ Zinc, helps the plant produce chlorophyll.

POTASSIUM

Essential Element:



- ▶ Potassium regulates the opening and closing of stomata thus regulating the uptake of CO₂ thus enhancing photosynthesis.
- ▶ It triggers activation of important biochemical enzymes for the generation of Adenosine Triphosphate (ATP). ATP provides energy for other chemical and physiological processes such as excretion of waste materials in plants.
- ▶ It plays a role in osmoregulation of water and salts in plant tissues and cells.
- ▶ Potassium also facilitates protein and starch synthesis in plants.
- ▶ It activates enzymes responsible for specific functions.



AMINO ACIDS

Proline, Glycine, Hydroxyproline, Alanine, Arginine, Lysine, Glutamine:

- ▶ Proline - protects the plants from various stresses and also helps plants to recover from stress more rapidly.
- ▶ Glycine - often used for production of a wide range of amino chelate nutrients.
- ▶ Hydroxyproline - provides structural integrity to mediating cell-cell interactions and communication.
- ▶ Alanine - a defense compound that enables plants to withstand various stresses such as hypoxia, waterlogging and drought, and indirectly as a precursor to the compounds pantothenate and CoA.
- ▶ Arginine - a major storage and transport form for organic nitrogen in plants.
- ▶ Lysine - an important signaling amino acid that regulates plant growth and responses to the environment.

CANE MOLASSES

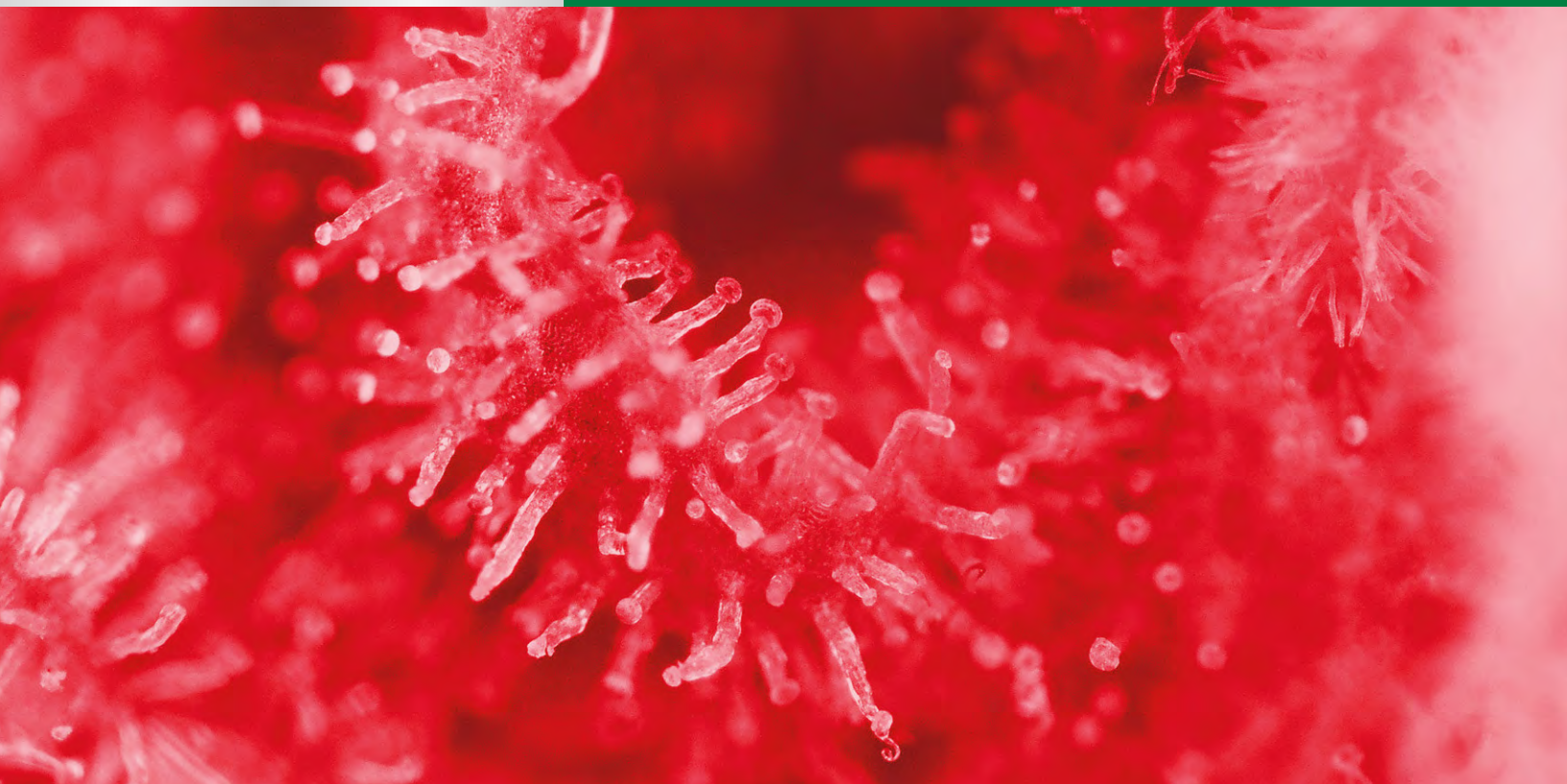
Blackstrap Molasses:



- ▶ Blackstrap molasses stimulates and encourages rapid plant growth and supplies the plant with iron, magnesium, potassium, sulfur, and some trace minerals. Molasses helps protect plants against diseases, pests, heat stress and cold damage.
- ▶ What does molasses do for the soil? Adding molasses to soil has been shown to improve the bacterial health of the soil, thus allowing the plants to be more receptive to nutrients and, in general, to be healthier.



Bring the Flavor Back to Your Flower!



MINERAL ADDITIVES



MY WAY TO GROW



For When Precision is Your Game!

QUICK FIXES FOR MINERAL DEFICIENCIES

Having deficiency problems with your plants? Bionova minerals allow you to tackle this with precision. You can also create your own mixture for a base nutrient. As with all Bionova products we use the best possible food-grade minerals for improved nutrient uptake, optimal control, and maximized output.

Diagnosing (reading) your plants is paramount. We will help you with diagnosing deficiencies of macro and micronutrients.

N - nitrogen deficiency causes yellow leaves and the veins also turn yellow. The older leaves discolor first, because nitrogen is mobile in the plant. It causes growth inhibition.

P - phosphorus deficiency can be recognized by a different leaf color of the older leaves. The leaves can become dark and dull, in extreme situations even reddish-purple. In your substrate, it can be recognized by decreased root development. Substrate with too low a temperature, too much moisture, or imbalanced pH can exacerbate this condition.

K - potassium deficiency is usually rare. It causes the stem to be thinner, smaller flower buds, smaller and pale fruits, yellowing or dying of leaf edges and possibly leaf dots. Potassium is very mobile, therefore deficiency is first visible in older leaves.

Mg - magnesium deficiency can be caused by too much potassium and, to a lesser extent, calcium. It leads to an accelerated breakdown of chlorophyll. This causes chlorosis of the older leaves while veins remain green.

Ca - in the case of a calcium deficiency, the least evaporating parts of the plant are affected, such as leaf margins and the top of a fruit (nose rot). Flowers remain smaller due to deficiency. Antagonism of potassium enhances this making calcium absorption more difficult.

In addition to the main elements that are applied via nutrients, a crop needs various trace elements, also called micronutrients. These are the smallest elements that must be present in the nutrition of a plant for optimal growth. However, various factors ensure that trace elements in many cases cannot be properly absorbed by a plant and a shortage occurs. This is what Bionova Micromix is all about!

Most micro-elements are present in outdoor fields and potting soils, but not completely plant available. Using Micromix ensures the addition of exact amounts of micro-elements to maintain physiology running at a higher level and to obtain a more consistent and bigger production. Micromix contains all the necessary chelated micro-elements, which are directly absorbable and available for plants in any pH range of irrigation water. If your plants present deficiencies of other micro-elements, you can apply Micromix by root or leaf to quickly correct nutritional shortages.

Nitrogen Deficiency Agent



1:2000

NPK
27-0-0

WHY?

Food grade mineral nutrient with 27% Nitrogen

Nitrogen plays a significant role in the plant's osmoregulation

Nitrogen is the primary substance of proteins (amino acids) and chlorophyll

Bionova N 27 is a very powerful liquid nitrogen nutrient specifically developed for plants

What is N 27?

The importance of nitrogen is a well-known fact for most cultivations. Nitrogen is, quantitatively speaking, the most important nutrient as it is the primary substance of proteins (amino acids) and chlorophyll. Furthermore, nitrogen appears in chromosomes (nuclei), DNA, and vitamins. It also plays a significant role in the plant's osmoses regulation. A deficiency of nitrogen manifests itself in the fading of the biggest leaves and premature blooming. An excess results in dark green leaves and slow growth. It is important when nitrogen is used as a nutrient, the appropriate form is used. N 27 is a very powerful liquid nitrogen nutrient. This product is one of the various well-known Bionova liquid mineral nutrients.

When to use N 27?

N 27 should be applied when deficiencies occur or when you want to stimulate growth. **N 27 can be used with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use N 27?

Application in Irrigation

In case of severe nitrogen deficiency add a max. of 4 ml per gallon of water. As a supplement during the growing period add 1-4 ml per gallon of water. A dosage of 1:1000 increases the total amount of N by 16.5 mmol and 0.3 mmol Mg.

Application as a Foliar Spray

9.5-19 ml per gallon.



Healthy Leaf



Nitrogen Deficiency

Food grade mineral nutrient with 27% nitrogen. Bionova N 27 should be used when a nitrogen deficiency occurs or when you want to develop advanced vegetative growth. Bionova N 27 is free of chlorides. Plants directly absorb all food grade minerals which gives you optimal control and performance of the cultivation.

GUARANTEED ANALYSIS

EC Nutrient - Calcium Nitrate Solution 8 (15)

NPK 27-0-0

27.16% Total Nitrogen (N) of which:
 5.23% Nitrate Nitrogen (NO₃) of which
 3.61% Ammonium Nitrate (NH₄) of which
 18.32% Urea Nitrogen (NH₂)

Available in Sizes:

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Spray



Hydro Aero



1:3000

Concentrated Trace Elements Mix

WHY?

The trace elements inside Bionova Micromix are indispensable when recycling substrate

Contains all the necessary chelated micro-elements

Quickly corrects nutritional shortages in your plants

Directly absorbable and available for plants in any pH range of irrigation water

What is Micromix?

The trace elements inside Micromix are indispensable for a great number of biological processes. A deficiency of trace elements immediately manifests itself by malfunctioning of the plant's vital functions and it manifests itself in the young leaves because trace elements cannot be transported within the plant. When re-using your soil upgrading the trace element proportions is mandatory.

A dose of 1:1000 Micromix increases the following elements: Fe by 100 μmol , Mn by 25 μmol , Bo by 140 μmol , Zn by 16 μmol , Mo by 5 μmol .

When to use Micromix?

Micromix should be applied when deficiencies occur and in case of re-using potting soil. **Micromix can be used with all Bionova nutrients, stimulators, minerals, universals, & substrates.**

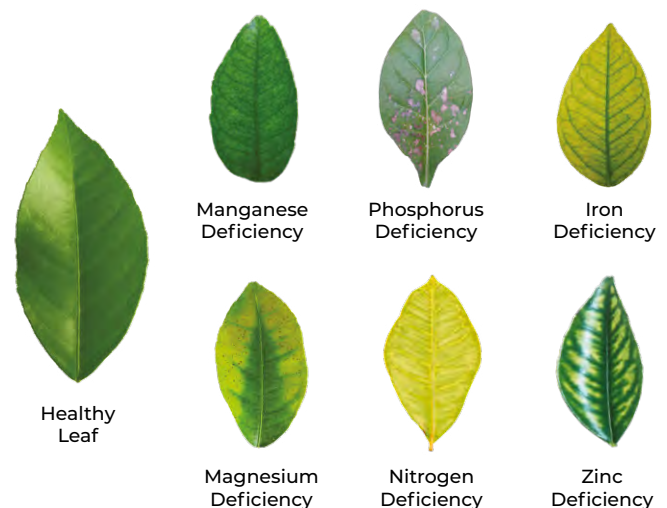
How to use Micromix?

Application in Irrigation

In case of deficiencies add 1-2 ml per gallon of water.

Application as a Foliar Spray

9.5-19 ml per gallon of water.



GUARANTEED ANALYSIS

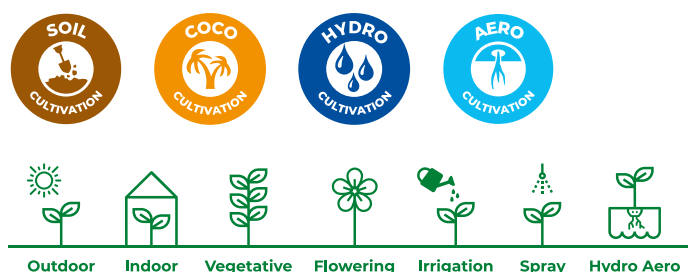
EC Nutrient - Liquid Mixture of Micro-Nutrients

0.60% Boron (B), water soluble
0.17% Copper (Cu), water soluble, EDTA chelated.
3.48% Iron (Fe), water soluble, DTPA chelated.
0.68% Manganese (Mn), water soluble, EDTA chelated.
0.02% Molybdenum (Mo), water soluble.
0.44% Zinc (Zn), water soluble, EDTA chelated.

Available in Sizes:

250 ml 1 liter 5 liters 20 Liters 200 Liters 1000 Liters

Suitable for cultivation methods:



Phosphorus Deficiency Agent



1:2500

NPK
3-20-0

WHY?

Food grade mineral nutrient with 20% Phosphorus

P 20 plays an important role in forming the energy carriers and DNA

Indispensable for the metabolism of sugars and cell membrane formation

Bionova P 20 is absorbed fast, is free of chlorides or other excess ingredients, and does not produce any unwanted side-effects

What is P 20?

P 20 plays an important role in forming the energy carriers and DNA. It is indispensable for the metabolism of sugars and forming cell membranes. Plants directly absorb all food grade minerals which gives you optimal control of your plants. P 20 can be used when your plants experience a phosphorus deficiency. A deficiency of phosphorus manifests itself in a slow growth and purple decolorization of the nerves at the lower surface of the leaf and purple stems caused by an anthocyanin-accumulation. An excess of phosphorus results in an ill-growing plant with an induced shortage of zinc. Before P 20 it used to be a problem to add any form of phosphorus to crops that would be entirely and quickly absorbed without any harmful side-effects. P 20 is absorbed fast and does not have any side-effects. P 20 is free of chlorides or other excess ingredients.

When to use P 20?

P 20 should be applied when deficiencies occur or to prompt the start of blooming. **P 20 can be used with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use P 20?

Application in Irrigation

In case of severe phosphorus deficiency add a max. of 0.4-4 ml per gallon of water. To stimulate root development and/or flowering add 0.4-2 ml per gallon of water. A dosage of 1:1000 increases the total amount of P by 3.5 mmol.

Application as a Foliar Spray

9.5-19 ml per gallon of water.



Healthy Leaf



Phosphorus Deficiency

Food grade mineral nutrient with 20% phosphorus. Plants have high demands for phosphorus in the first weeks of flowering. This product offers a head start in fruit and flower development. P 20 can be used as a "fixer" or as a "supplement" for more advanced growers.

GUARANTEED ANALYSIS

EC Nutrient - Solution of NP Nutrients 3-20-0

3.56% Total Nitrogen (N) of which:
2.7% Nitrate Nitrogen (NO₃)
0.7% Ammonium Nitrogen (NH₄)
19.8% Phosphorus (P) as (P₂O₅)

Available in Sizes:

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Spray



Hydro Aero



 1:2000

 NPK
 3-0-20

Potassium Deficiency Agent

WHY?

Food grade mineral nutrient with 20% Potassium

Makes plant cells more sturdy (water balance), and prompts the bloom cycle

Potassium is important for the opening and closing of the stomata

Provides higher quality fruit/flowers, improved firmness and higher dry-weight content

What is K 20?

Besides the basic elements N and P, K 20 (Potassium) is crucial for every cultivation. Potassium makes cells sturdier (water balance) and prompts the bloom cycle. Potassium also plays an important role in the formation of cells, osmoregulation, and carbohydrate balance. Furthermore, potassium is important for the opening and closing of the stomata, which enables the drainage of excessive heat. A deficiency of potassium does not allow the plant to open the stomata sufficiently for transpiration which allows it to cool down. This leads to the development of chlorosis at the leaf edge, developing to necrosis (death) in later stages. In the case of an excess of potassium the plant will be curbed in its development and will subsequently turn dark. Excess potassium also hampers the absorption of other cations (Ca and Mg).

When to use K 20?

K 20 should be applied when deficiencies occur and/or to mature and improve firmness. **K 20 can be used with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use K 20?

Application in Irrigation

As a supplement during the blooming period add 0.4-4 ml per gallon of nutrient solution. A dosage of 1:1000 increases the total amount of K by 5 mmol.

Application as a Foliar Spray

Cannot be used as a foliar spray.



Healthy Leaf



Potassium deficiency

Food grade mineral nutrient with 20% potassium. Plants have a high demand for potassium during the maturation phase. Potassium plays an important role in osmoregulation, in the opening and closing of the stomata, protein synthesis, and the functioning of enzymes. A proper potassium level results in higher quality fruit/flowers, improved firmness and higher dry-weight.

GUARANTEED ANALYSIS

EC Nutrient - Calcium Nitrate Solution 8 (15) NPK 3-0-20

3.4% Total Nitrogen (N) of which:
 2.7% Nitrate Nitrogen (NO₃)
 0.7% Ammonium Nitrate (NH₄)
 19.7% Potassium (K) as (K₂O)

Available in Sizes:

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Hydro Aero

Calcium Deficiency Agent



1:3000

**NPK
8-0-0
+15%
CAO**

WHY?

Food grade mineral nutrient with 15% Calcium

Plays an important role in stabilizing plant cell walls

Ca 15 causes ion-reactions within plants, influencing growth hormones

Plants directly absorb all food grade minerals to provide optimal control of your plants

What is Ca 15?

Calcium often appears in the cell walls and membranes and plays a special role in the ion-reactions within plants. Calcium is transported in the plant by means of water conduction (xylem). In situations with a high humidity or in a compact crop the rate of conduction is small and can lead to a deficiency of calcium. A deficiency of calcium leads to softened cell walls which manifests itself immediately in an increased sensitivity to fungi and the dying off of young leaves and growing points. An excess of calcium can also occur. Which results in brown spots on the leaves.

When to use Ca 15?

Ca 15 should be applied when deficiencies occur and/or to strengthen cell walls. **Ca 15 can be used with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use Ca 15?

Application in Irrigation

In areas with soft water add to Supermixes 0.75-1.5 ml per gallon of water. When using Reverse Osmosis Water add 0.75-3 ml per gallon of water. A dosage of 1:1000 increases the amount of Ca by 3.2 mmol.

Application as a Foliar Spray

9.5-19 ml per gallon of water.



Healthy Leaf



Calcium Deficiency

Food grade mineral nutrient with 15% calcium, Ca 15. Calcium plays an important role in stabilizing the cell walls, ion-reactions within plants, influencing growth hormones and it controls the transport of nutrients and water in your plant. In situations with a high humidity or in a compact crop the rate of conduction is small and can lead to a deficiency of calcium.

GUARANTEED ANALYSIS

EC Nutrient - Calcium Nitrate Solution 8 (15)

NPK 8-0-0 + 15% CaO

7.35% Nitrate Nitrogen (NO₃)

15.69% Calcium as (Ca) from CaO

2.84 Magnesium as (Mg) from MgO

Available in Sizes:

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Spray



Hydro Aero

Magnesium Deficiency Agent



1:3000

NPK
6-0-0
+10%
MgO

WHY?

Food grade mineral nutrient with 10% Magnesium

Magnesium is essential for photosynthesis

Forms the reactive nuclei in the chlorophyll

Gives you the ability to precisely adjust Mg levels

What is MgO 10?

A deficiency of magnesium manifests itself in chlorosis (slight discoloration) between the nerves of old leaves. An excess, results into an unhealthy crop with small leaves! Plants directly absorb all food grade minerals giving you optimal control of your cultivation. Magnesium in MgO 10 forms the reactive nuclei in the chlorophyll, which converts light energy into chemical energy (ATP and ADP).

When to use MgO 10?

MgO 10 should be applied when deficiencies occur and to stabilize the pH of RO water. **MgO 10 can be used with all Bionova nutrients, stimulators, minerals, universals, & substrates.**

How to use MgO 10?

Application in Irrigation

In case of deficiencies add 0.75-3 ml per gallon of water. When using Reverse Osmosis Water add 2-5.75 ml per gallon of water. A dosage of 1:1000 increases the total amount of Mg by 2 mmol.

Application as a Foliar Spray

9.5-19 ml per gallon of water.



Healthy Leaf



Magnesium Deficiency

Food grade mineral nutrient with 10% magnesium. MgO 10 Magnesium is essential for photosynthesis and forms the reactive nuclei in the chlorophyll. MgO 10 is mostly used when a deficiency occurs. When using Bionova's main nutrients and stimulators, there is always the right amount of Magnesium, except when cultivating with reverse osmosis water or when cultivating with LED's.

GUARANTEED ANALYSIS

EC Nutrient - Magnesium Nitrate Solution 6 (10) NPK 6-0-0 + 10% MgO

6% Total Nitrogen (N) of which:

6% Nitric Nitrogen (N)

10% Magnesium oxide (MgO), water soluble

Available in Sizes:

1 liter

5 liters

20 Liters

200 Liters

1000 Liters

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering



Irrigation



Spray



Hydro Aero



UNIVERSALS



MY WAY TO GROW



Concentrated Trace Elements Mix



WHY?

Nutrients will be more plant available and absorbed more easily resulting in higher yields

Microlife stimulates the growth of micro-organisms

Microlife enriches and stimulates soil life

Packed full of essential soil organisms like Mycorrhizae sp., Bacillus sp., yeasts and enzymes

What is Microlife?

Microlife is a mycorrhizae soil enhancer with micro-organisms. Microlife stimulates, enriches, and adds natural occurring micro-organisms to the soil. This assures a better soil structure, better rooting and enhanced air-water balance. Absorbable nutrients will be more plant available and easily absorbed resulting in a higher yield. Microlife organisms bring the soul back to your soil! Antagonistic micro-organisms (such as fungi of the Penicillium, Trichoderma and perigillus families) are also present, producing antibiotic effects. In addition, there are Actinomycetes from the family of Streptomyces and nitrogen binding bacteria of the Azoto bacter string. The amino acid Glycerine and small amounts of vitamins C, B1 and E are also present. Finally, the included clay minerals and algae are good resources for a large variety of trace elements that are needed for the healthy development of soil life and plants.

When to use Microlife?

Microlife can be used from the first week of veg until harvest.

Microlife can be used with all Bionova nutrients, stimulators, minerals, universals & substrates.

How to use Microlife?

Application as Substrate Additive

28-57 g per ft³ potting soil depending on the soil quality. Repetition while changing crops: 28 g per ft³ potting soil, work the product in well.

Using this product will bring a higher yield with fewer illnesses or root problems and a much higher resistance to stress, which will in turn prevent plant shock and loss. Photosensitivity will increase resulting in higher yields - especially for crops grown with artificial light.

GUARANTEED ANALYSIS

SOIL IMPROVER

2% Nitrogen (N) of which:
1% Ammoniacal Nitrogen
1% Nitric Nitrogen
2% Phosphorus Pentoxide (P₂O₅)
2% Potassium Oxide (K₂O)

Ingredients: Bone meal, cacao pellets, lime, clay minerals (Bentonite), compost and Ascophillum Nodosum.

Micro-Organisms – Mycorrhizae Species (Endo and Ecto):

Glomus intraradices	Glomus deserticola	Rhizopogon amylopogon
Glomus mosseae	Glomus brasillanum	Rhizopogon villosuli
Glomus aggregatum	Gigaspora margarita	Rhizopogon fulvigleba
Glomus clarum	Pisolithus tinctorius	Rhizopogon luteolus
Glomus monosporus	Laccaria bicolor	Scloderma citrinum
Glomus etunicatum	Laccaria laccata	Scloderma cepa

Micro Organisms – Bacillus Species:

B. licheniformis	B. subtilis	B. pasteurii
B. laevolacticus	B. amyloliquefaciens	B. Azotofixans

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering

Available in Sizes:

2 kg

25 kg

1000 kg

All-In-One Granular Fertilizer



WHY?

Easy to use product

Mix this basic fertilizer into your soil and it's fertilized for 10-12 weeks

Natural fertilizer completely free of animal waste

Profimix stimulates the activity of micro-organisms and enhances the rooting process

What is Profimix?

Profimix is developed for maximum profit and easy usability. Profimix contains organic fertilizers + micro-organisms. The organic matter we put inside Profimix is completely free of animal-waste, so it's a veganic fertilizer. After mixing Profimix in the soil, water is all you need to grow! Mix this basic fertilizer into your soil, and it's fertilized for 10-12 weeks. The easiest way to cultivate! Profimix stimulates micro-organism activity, enhances the rooting process, and provides vigorous growth and bloom. Profimix enhances the plant's natural resistance against pests and disease.

When to use Profimix?

Profimix is for a full growth cycle. **Profimix can be used with all Bionova nutrients, stimulators, minerals, universals & substrates.**

How to use Profimix?

Application as Substrate Additive

Profimix is mixed into open soil or a substrate. Mix 10 kg's of our Profimix per 1076 ft² of soil. All that is required from that point forward is to add water regularly. No pH has to be measured as the micro-organisms inside the product will balance the pH in your substrate in a natural way!

Profimix is a vegan grain fertilizer, specially created as an easy-to-use product. Just mix 100-150 grams per 3-5 gallon pot. Then just add water. No need to measure pH as the micro-organisms inside the product will balance the pH in your substrate in a natural way!

- All around fertilizer for natural cultivation
- Rapid growth and more internodes
- Higher resistance against stress factors
- Better root development
- Very cost-efficient - works for 3 months
- Stimulates the soil-ecosystem
- 100% vegetal

GUARANTEED ANALYSIS

EC FERTILIZER

Mixture of NPK fertilizers 5-4-7+2 MgO

5% Total Nitrogen (N) of which:
2% Ammoniacal Nitrogen (N)
3% Nitric Nitrogen (N)
4% Phosphor pentoxide (P2O5)
7% Potassium oxide (K2O)
2% Magnesium oxide (MgO) Water soluble
3% Sulfur trioxide (SO3)

Also contains: Bentonite, seaweed, lime, vinasse, cacao pellets, enzymes, amino acids, vitamins, humates, natural chelated trace-elements and micro-organisms. No animal by-products are used.

Suitable for cultivation methods:



Outdoor



Indoor



Vegetative



Flowering

Available in Sizes:

2 kg

25 kg

1000 kg



It is crucial to manage pH values of the water/nutrient solution you feed to the plant. Plants only absorb all nutrients when applied in the correct pH range. When your pH is too low or too high, the plant won't be able to uptake all nutrients.

What is pH-?

pH- is a 24.5% phosphoric acid solution.

What is pH+?

pH+ is a 24.5% potassium hydroxide solution.

When to use pH-?

Our pH- can be used from the first week of veg until one week before harvest. Flushing is mandatory. **pH- can be used with all Bionova stimulators, minerals, universals & substrates.**

When to use pH+?

Our pH+ can be used from the first week of veg until 2 weeks before harvest. Flushing is mandatory. **pH+ can be used with all Bionova stimulators, minerals, universals & substrates.**

How to use pH-?

Application in Irrigation

0.75-1.5 ml per gallon. Adjust as needed.

Application as a Foliar Spray

Cannot be used as a foliar spray.

How to use pH+?

Application in Irrigation

0.75-1.5 ml per gallon. Adjust as needed.

Application as a Foliar Spray

Cannot be used as a foliar spray.

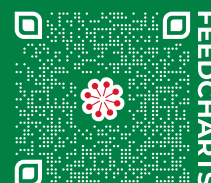
Available in Sizes:



Available in Sizes:



Suitable for cultivation methods:



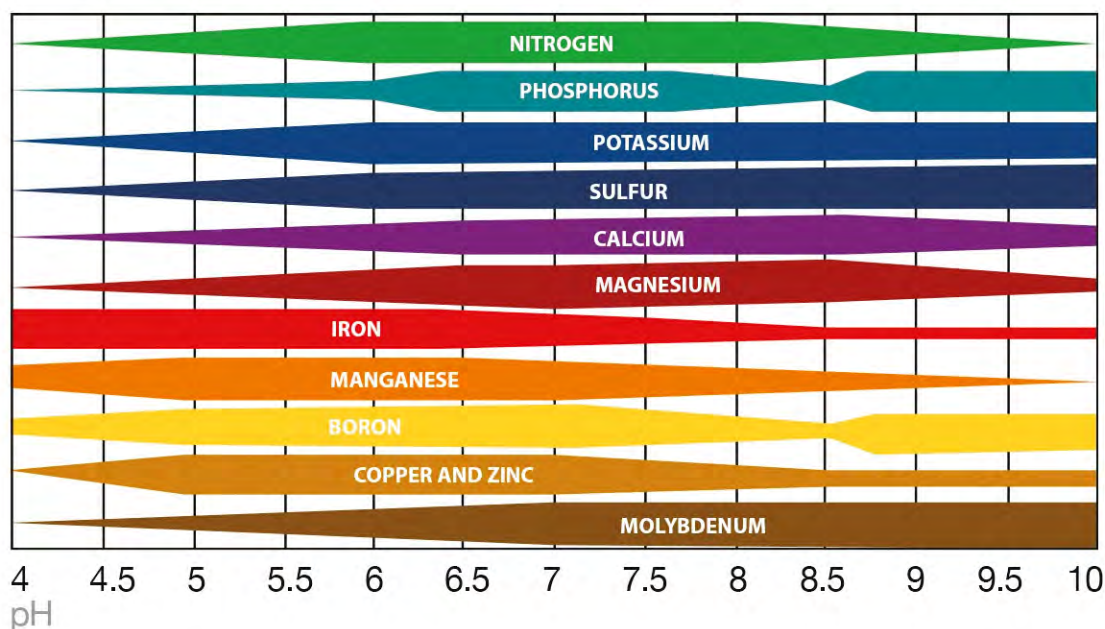


pH

Although most plants will grow within a wide pH range, 3.5 to 8.0, for many years the suggested range of pH values for growth of good quality foliage plants is 5.5 to 6.5. This recommendation originated back when most ornamental plants were grown in mineral or organic soils or soil-containing mixtures.

"The key to pH is that it is going to influence the key nutrients available to plants – nitrogen, phosphorus and potassium – and other nutrients like calcium and boron. When pH is in the right range, it makes it easier for the plants to uptake the nutrients they need."

- Weston Miller
Oregon State University Horticulturist



Blank Feedchart



Measurements: ☐ ml ☐ fl. oz. ☐ gram per ☐ gallon ☐ liter Reservoir Size: Optimal pH: Grow Media:

[illegible]

ml/Gallon

- *When using Silution, mix Silution first & wait 30 mins. Then add main nutrients, followed by other stimulators.
- When irrigating with soft or RO water, we recommend adding Ca 15 (±1.5 ml / gallon) and MgO 10 (±1.5 ml / gallon).
- Main nutrient dosage can be adjusted in increments of approximately 10%.
- The EC values on these charts assumes pre-nutrient RO water with EC 0.0.

HYDRO		GROW	EARLY BLOOM			MID BLOOM			LATE BLOOM		FLUSH
			Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Nutri Forte A		3	5	6	7	7	7	7	5	5	-
Nutri Forte B		3	5	6	7	7	7	7	5	5	-
EC		0.9	1.2	1.5	1.7	1.7	1.7	1.7	1.5	1.2	-
NOTE: First mix part A, followed by part B. Adjust pH to ± 5.5-6.0.											
STIMULATORS	BN-Roots	3	2.5	2	-	-	-	-	-	-	-
	X-cel	2	2	3	3	4	4	4	4	4	-
	The Missing Link	2	2	2	2	2	2	2	2	2	-
	BN-Zym	2	2	2	2	2	2	2	2	2	2
	Vitasol	-	-	-	-	-	1.5	3	3	4	3
	Silution*	1	1	1	1	1	1	1	1	1	-

COCO		GROW	EARLY BLOOM			MID BLOOM			LATE BLOOM		FLUSH
			Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Coco Forte A		3	5	6	7	7	7	7	6	<5	-
Coco Forte B		3	5	6	7	7	7	7	6	<5	-
EC		0.9	1.2	1.4	1.6	1.6	1.6	1.6	1.4	1.2	-
NOTE: First mix part A, followed by part B. Adjust pH to ± 5.5-6.5.											
STIMULATORS	BN-Roots	3	2.5	2	-	-	-	-	-	-	-
	X-cel	2	2	3	3	4	4	4	4	4	-
	The Missing Link	2	2	2	2	2	2	2	2	2	-
	BN-Zym	2	2	2	2	2	2	2	2	2	2
	Vitasol	-	-	-	-	-	1.5	3	3	4	3
	Silution*	1	1	1	1	1	1	1	1	1	-

SOIL		GROW	EARLY BLOOM			MID BLOOM			LATE BLOOM		FLUSH
			Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Soil Supermix		5	7	9	10	10	10	9	8	<7	-
PK 13-14		-	0.5	1	1	1.5	2	2	2	<2	-
EC		0.6	0.9	1.2	1.3	1.4	1.4	1.4	1.3	1.1	-
NOTE: Mix Soil Supermix first, followed by PK 13-14. Adjust pH to ± 6.0-6.5.											
STIMULATORS	BN-Roots	3	2.5	2	-	-	-	-	-	-	-
	X-cel	2	2	3	3	4	4	4	4	4	-
	The Missing Link	2	2	2	2	2	2	2	2	2	-
	BN-Zym	2	2	2	2	2	2	2	2	2	2
	Vitasol	-	-	-	-	-	1.5	3	3	4	3
	Silution*	1	1	1	1	1	1	1	1	1	-

ml/Gallon

- *When using Silution, mix Silution first & wait 30 mins. Then add main nutrients, followed by other stimulators.
- **When irrigating with soft or RO water, we recommend adding Ca 15 (±1.5 ml/gallon) and MgO 10 (±1.5 ml/gallon).
- Main nutrient dosage can be adjusted in increments of approximately 10%.

HYDRO		GROW	EARLY BLOOM			MID BLOOM			LATE BLOOM		FLUSH
			Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Nutri Forte A		2.8	4.2	5.1	5.9	5.9	5.9	5.9	5.1	-	-
Nutri Forte B		2.8	4.2	5.1	5.9	5.9	5.9	5.9	5.1	-	-
NOTE: First mix part A, followed by part B. Adjust pH to ± 5.5-6.0.											
STIMULATORS	BN-Roots	2.3	1.9	1.5	-	-	-	-	-	-	-
	X-cel	1.9	1.9	3.0	3.0	3.8	3.8	3.8	3.8	3.8	-
	The Missing Link	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	-
	BN-Zym	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.8	7.6
	Vitasol	-	-	-	-	0.8	1.1	1.5	2.3	2.3	-
	Silution*	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-
MINERALS	N27	0.8	0.6	0.2	-	-	-	-	-	-	-
	P20	0.4	0.9	1.9	1.5	0.9	0.4	-	-	-	-
	K20	-	-	-	0.4	0.9	1.3	1.7	1.9	1.5	-
	Ca15**	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.4	-
	MgO10**	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.4	-

COCO		GROW	EARLY BLOOM			MID BLOOM			LATE BLOOM		FLUSH
			Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Coco Forte A		2.8	4.2	5.1	5.9	5.9	5.9	5.9	5.1	-	-
Coco Forte B		2.8	4.2	5.1	5.9	5.9	5.9	5.9	5.1	-	-
NOTE: First mix part A, followed by part B. Adjust pH to ± 5.5-6.5.											
STIMULATORS	BN-Roots	2.3	1.9	1.5	-	-	-	-	-	-	-
	X-cel	1.9	1.9	3.0	3.0	3.8	3.8	3.8	3.8	3.8	-
	The Missing Link	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	-
	BN-Zym	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.8	7.6
	Vitasol	-	-	-	-	0.8	1.1	1.5	2.3	2.3	-
	Silution*	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-
MINERALS	N27	0.8	0.6	0.2	-	-	-	-	-	-	-
	P20	0.4	0.9	1.9	1.5	0.9	0.4	-	-	-	-
	K20	-	-	-	0.4	0.9	1.3	1.7	1.9	1.5	-
	Ca15**	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.4	-
	MgO10**	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.4	-

SOIL		GROW	EARLY BLOOM			MID BLOOM			LATE BLOOM		FLUSH
			Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Soil Supermix		4.16	5.86	7.94	8.69	8.69	8.69	7.94	7.18	-	-
NOTE: Mix Soil Supermix first followed by stimulators and minerals. Adjust pH to ± 6.0-6.5.											
STIMULATORS	BN-Roots	5.7	3.0	1.5	-	-	-	-	-	-	-
	X-cel	1.9	1.9	3.0	3.0	3.8	3.8	3.8	3.8	3.8	-
	The Missing Link	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	-
	BN-Zym	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.8	7.6
	Vitasol	-	-	-	-	0.8	1.1	1.5	2.3	2.3	-
	Silution*	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-
MINERALS	N27	0.8	0.6	0.2	-	-	-	-	-	-	-
	P20	0.4	0.9	1.9	1.5	0.9	0.4	-	-	-	-
	K20	-	-	-	0.4	0.9	1.3	1.7	1.9	1.5	-
	Ca15**	0.6	0.8	0.9	1.1	1.1	1.1	1.1	1.1	0.8	-
	MgO10**	0.6	0.8	0.9	1.1	1.1	1.1	1.1	1.1	0.8	-

Strain Information

Note which specific strains you are growing and their known attributes. After harvest, fill out the bottom section with final results. Copy this page as needed.

Strain Name: _____

Acquired: _____ ☐ **Seed** ☐ **Clone**

Breeder: _____

Percentage / Genetics: _____

Type: INDICA 50% SATIVA

☐ **Feminized**

☐ **Autoflower**

Plant Count: _____
Taken to Flower

Results:

Days of Flowering

Days Cured

Final Weight

Pistol Shape:

Shrivelled

Swollen

Pistol Color:

White

Amber

Bud Density:

Loose

Dense

Bud Interior Color:

Light

Dark

Description:

Describe leaf,
bud color, bud
shape,
terpenes, etc.

Daily Activity

Note your daily feeding and IPM activity. You may also want to keep track of other observations such as growth rate, leaf color, possible nutrient deficiencies, input adjustments, etc. Copy this page as needed.

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____

Daily Activity

Note your daily feeding and IPM activity. You may also want to keep track of other observations such as growth rate, leaf color, possible nutrient deficiencies, input adjustments, etc. Copy this page as needed.

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____

Daily Activity

Note your daily feeding and IPM activity. You may also want to keep track of other observations such as growth rate, leaf color, possible nutrient deficiencies, input adjustments, etc. Copy this page as needed.

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____

Week / Day

☐ Veg
 ☐ Flower

Room / Location

Daily Health Score:

Poor

Neutral

Healthy

☐ Nutrients
 ☐ Water Only
 ☐ Foliar
 ☐ Pruned
 ☐ Cleaned
 ☐ _____



BIONOVA
PREMIUM FERTILIZERS



**THE POWER
TO PERFORM**

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Cultivation Questions?

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