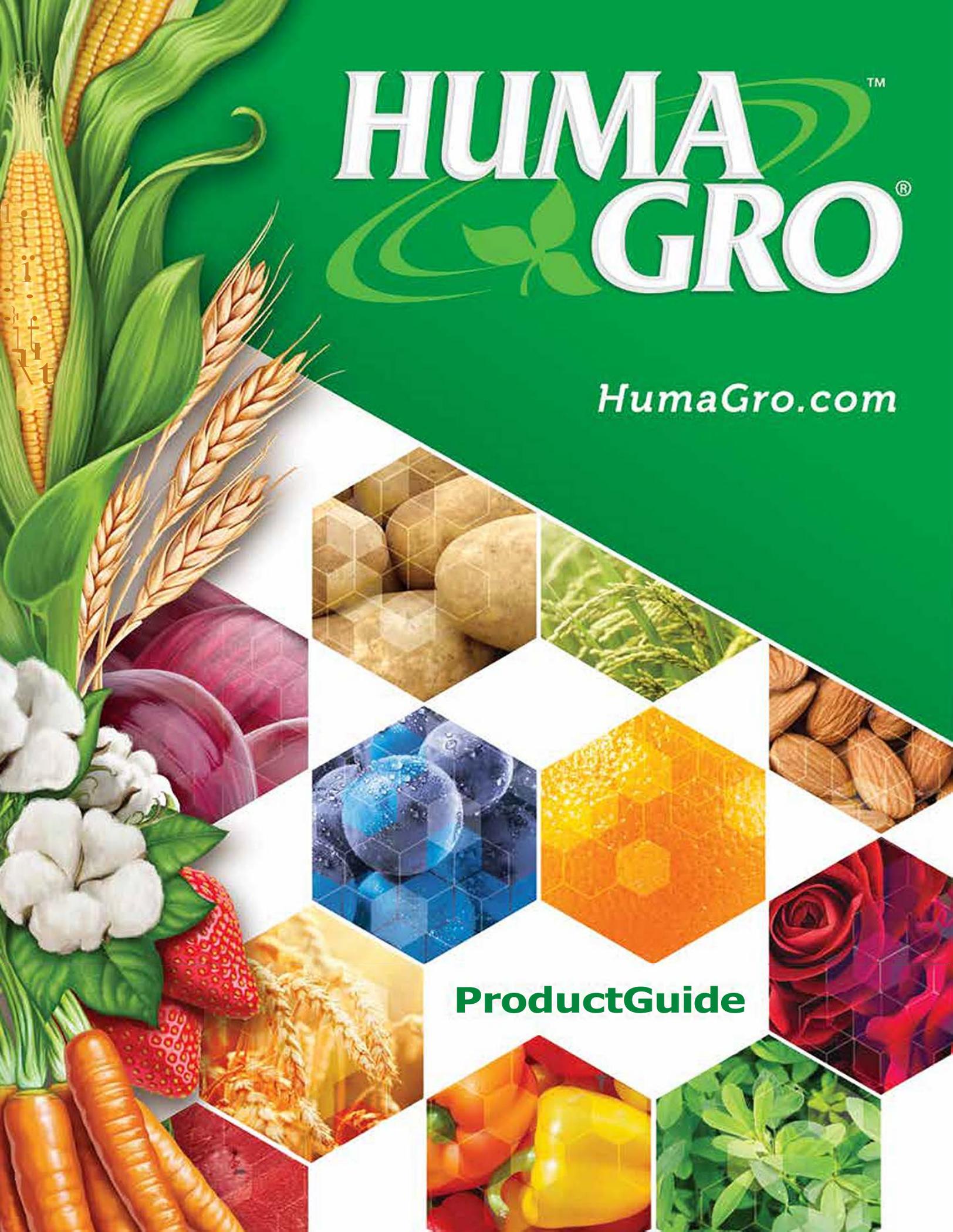


# HUMA GRO<sup>TM</sup>

[HumaGro.com](http://HumaGro.com)



**ProductGuide**



DRIVEN BY  
**NATURE**  
 POWERED BY  
**SCIENCE**

Ask us about our  
**Fertilgold**  
 ORGANICS  
 line of products!

**THE GLOBAL LEADER IN HUMIC SUBSTANCES AND HUMIC TECHNOLOGY**

The only products with MICRO CARBON TECHNOLOGY®



**SOIL  
 FERTILITY**

**GROWTH  
 MANAGEMENT**

**CROP  
 NUTRITION**

**ORGANIC  
 ACIDS**

**CROP  
 PROTECTION**

# Contents



4	Core Purpose, Operating Values
5	Company Overview
6	Micro Carbon Technology®
9	The Huma Gro® Advantage
10	Huma Gro® Product Line
11	<b>Sustainable Soil Fertility</b>
18	<b>Optimal Growth Management</b>
26	<b>Ultra-Efficient Crop Nutrition</b>
26	• <b>Macronutrients</b>
36	• <b>Secondary Macro and Micronutrients</b>
48	<b>Zero-Residue Crop Protection</b>
52	<b>Carbon-Rich Organic Acids</b>
56	• <b>Huma Burst® Dry Humic/Fulvic Acids</b>
64	Crop Programs
68	Stories From the Field
72	Huma Gro® Product Comparison Guide
74	Product Mixing Guide
75	Fertilgold® Organics



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# Our Core Purpose

Enhance the quality of life  
by **Empowering** others  
with humic substances.



# How We Do This

Investigate, Innovate, Implement, Improve.



# Our Operating Values



***Uncompromising Integrity***

***“Win-Win-Win” Relationships***



***Proactive Innovation***



***Pursuit of Excellence***



# Who We Are & What We Do

Huma Gro® is a product line of liquid and dry plant nutrition and specialty agriculture input products. **Huma Gro® products are unique due to a proprietary “complexing” process that combines nutrients with very small organic particles that allow the nutrients to be absorbed into the plant at an efficiency rate far higher than other competitive products.** These small organic particles are referred to as “Micro Carbon Technology®” (MCT). Huma Gro® products with MCT allow nutrients to be delivered with extreme precision—increasing overall efficiency and effectiveness, more than any other product on the market. The results are a higher yield of a more premium quality crop, while also significantly reducing storage, handling, and application costs.

Huma Gro® is one of several brands of Bio Huma Netics, Inc.® (BHN), located in Gilbert, Arizona. BHN was founded under the name Sunburst Mining Company in 1973 by Dr. Jordan Smith<sup>2</sup>, Don Organ<sup>1</sup>, and Delworth Stout<sup>3</sup>. These men discovered a unique oxidized humate material in a mine in the northwestern United States. This material was rich in natural organic compounds and minerals. When it was first applied to farm soils as a dry compound, it improved soil conditions, accelerated nutrient uptake, enhanced crop vigor, and increased yields.

By 1984, Sunburst Mining had become Bio Huma Netics, Inc.® and had developed a proprietary process to extract organic acids, valuable minerals, and other organic components from the mined material.

This extract contains the base of MCT that is the foundational ingredient used in almost all of the over **50 unique formulations of Huma Gro® products.**

Throughout the years, Huma Gro® products have been constantly refined and improved. **These highly sustainable liquid solutions allow growers to control their crop with unparalleled precision** by utilizing sustainable soil fertility, ultra-efficient crop nutrition, optimal growth managers, zero-residue crop protection, and carbon-rich organic acids.



1. Mr. Donald Organ
2. Dr. Jordan Smith
3. Mr. Delworth Stout



# Micro Carbon Technology®



## What is Micro Carbon Technology®?

Micro Carbon Technology® (MCT) is a proprietary blend of extremely small organic carbon- and oxygen-rich molecules that act as a source of carbon and provide an ultra-efficient vehicle to move nutrients and other molecules into the plant through the soil and/or the leaves.

## Where does MCT come from?

The beginning of MCT can be traced back to 1973 when our scientists discovered a unique organic material that, when applied to farm fields, improved both the soil's fertility and the plants' nutrient uptake. We now know this material to be mainly composed of a high-quality leonardite. Our leonardite is a soft, humic material, rich in carbon, that was never compressed or heated to become coal.



## What can MCT-based products do that other products do not?

- MCT is an ultra-efficient delivery system that allows growers and crop managers to achieve far more with much less product. **Lower input volume = increased yield.**
- Many inputs harm the soil. Huma Gro® products have a **positive environmental impact through the improvement of overall soil and plant health** by providing efficient foliar nutrition, promoting the growth of roots, and enhancing beneficial microorganisms in the soil.



## What makes Huma Gro® products unique and so efficient?

The secret to our high efficiency rates is Micro Carbon Technology®. Using MCT as the base, we have developed many highly effective products for virtually every type of application. Building upon this base results in:

- **Enhanced activity and diversity of beneficial microorganisms.**
- **Improved soil physical structure.**
- **Enhanced nutrient availability and uptake.**
- **Improved plant tolerance of environmental stresses.**

Our products efficiently supply your crop with the essential nutrition it needs for optimal growth, fruiting, and vigor. **The results are higher quality, increased yield, and maximum profit.**



## Why should I use or sell Huma Gro® products with MCT?

Our products containing MCT are:

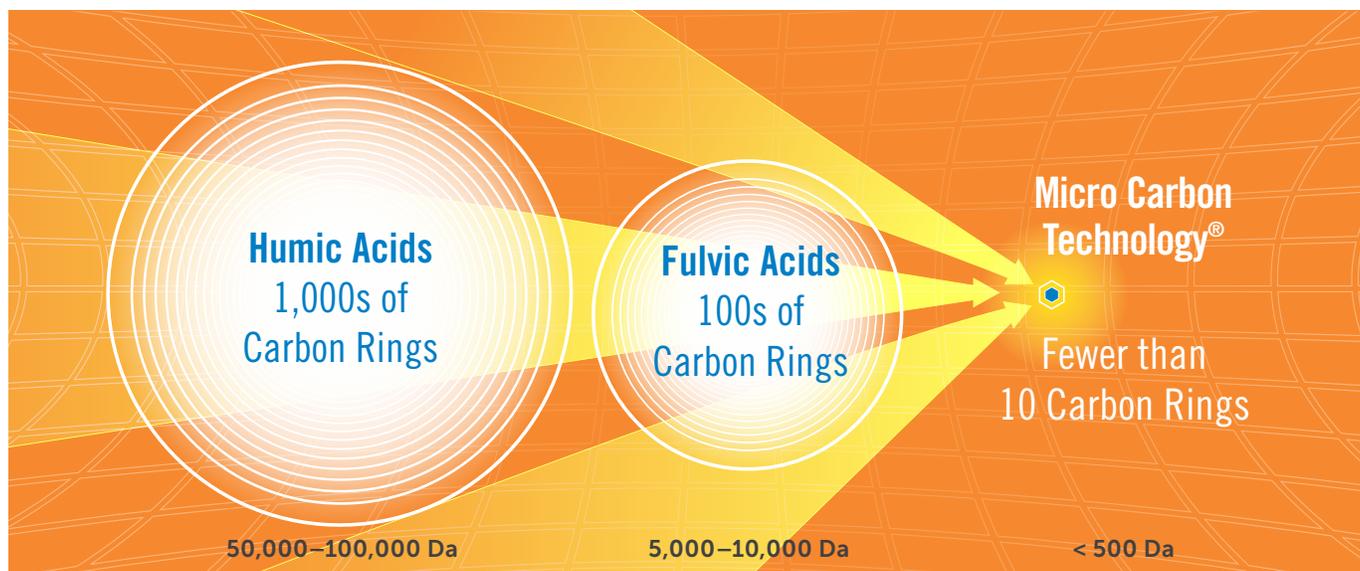
- **Exclusive—no one else has them.**
- **Based on a highly active form of carbon.**
- **More nutritionally rich.**
- **Ultra-concentrated, dramatically reducing storage requirements.**
- **Environmentally friendly.**
- **Compatible with most agrochemical applications.**



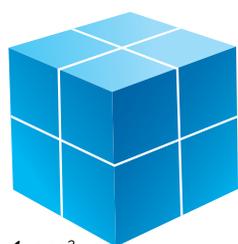
## How does MCT produce such compelling results?

The carbon molecule size makes the difference.

The significantly smaller particle mass allows nutrients to be transported through leaf and root at a far higher rate.

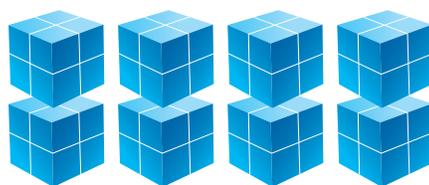


MCT produces organic matter with greater specific surface area.



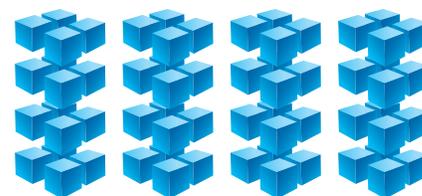
1 cm<sup>2</sup>

$$1 \text{ cm}^2 \times 1 \text{ cm}^2 \times 6 = 6 \text{ cm}^2$$



0.5 cm<sup>2</sup>

$$0.5 \text{ cm}^2 \times 0.5 \text{ cm}^2 \times 6 \times 8 = 12 \text{ cm}^2$$



0.25 cm<sup>2</sup>

$$0.25 \text{ cm}^2 \times 0.25 \text{ cm}^2 \times 6 \times 64 = 24 \text{ cm}^2$$

**Greater specific surface area = incredibly more efficient products.**

## What are the key benefits of Micro Carbon Technology®?

**NON-SELECTIVE:** works with both metallic (+) and non-metallic (-) ions.

**VERSATILE DELIVERY:** can be sprayed on the soil directly or applied through all irrigation systems and/or as a foliar.

**LOW ENERGY:** requires less plant effort to uptake nutrients, and protects nutrients from being tied up in the soil profile.

# The MCT Difference!

## SUSTAINABLE SOIL FERTILITY

### *Unlike Conventional Products, Huma Gro® Soil Fertility Products:*

- Activate beneficial microorganisms in the soil.
- Flocculate clay particles or aggregate sand for improved soil structure.
- Buffer stress from soil toxicities (salts & heavy metals).
- Improve water penetration and water-holding capacity.
- Increase root mass development naturally—up to 25% and more.



## OPTIMAL GROWTH MANAGEMENT

### *Unlike Synthetic Hormones, HUMA GRO® Growth Products:*

- Achieve uniform blooming, fruit set, fruit sizing, and maturity.
- Use natural plant metabolic processes without long-term side effects.
- Do not create environmental hazards or public health concerns.
- Manipulate the plant to do what you want it to do, when you want it to do it.



## ULTRA-EFFICIENT CROP NUTRITION

### *Unlike Conventional Nutrition Products, HUMA GRO® Products:*

- Save costs by lowering the amount of N-P-K that needs to be applied.
- Are based on organically complexed nutrients, with significantly higher efficiency rates.
- Lower the salt index and buffer nutrients—preventing phytotoxicity and root burn.
- Decrease N-P-K residues for reduced toxicity and environmental impact.



## ZERO-RESIDUE CROP PROTECTION

### *Unlike Conventional Pesticides, HUMA GRO® Biopesticides:*

- Leave zero harmful chemical residues.
- Do not damage the environment or create concern for human health.
- Can be used long-term. Pests do not develop resistance.
- Have zero re-entry level requirements. Minimal protective gear is needed.
- Will kill on contact, and can be applied anytime up to the day of harvest.



## CARBON-RICH ORGANIC ACIDS

### *Unlike Conventional Organic Acids, HUMA GRO® Products:*

- Are higher-performing fertility products based on organic acid compounds.
- Allow the nutrients to easily assimilate through the roots and leaves.
- Buffer roots against the damaging effect of highly acidic or alkaline soils.
- Maximize the potential of your fertilizer, resulting in better germination, efficient foliar applications, and a more vigorous growth.



# The Huma Gro<sup>®</sup> Advantage

FEATURES	ADVANTAGES	BENEFITS
<b>Proprietary Delivery System</b>	Sub-molecular carbon-rich particles enter and transport nutrients throughout the plant.	Save input and handling costs. Up to 4 times more efficient than conventional products.
<b>Optimal Nutrition</b>	Complete nutritional packages that fulfill all fertility needs. Achieve better plant health.	Use fewer chemicals, save costs, and be more environmentally sound. Achieve true sustainability with more options.
<b>Liquid Versatility</b>	Can be applied in a variety of methods. Can be sprayed or injected into all types of irrigation.	Flexibility. Apply the product with your current practices. No need to change.
<b>Ultra-Concentrated</b>	Smaller volume needed to cover more crops. Easier to transport, ship, and store.	Reduce storage space. Lower application rates. Less handling.
<b>Smaller Molecule Size</b>	Facilitates the absorption of essential nutrients through both roots and leaves.	Nutrient deficiencies can be treated more effectively. Increased nutrient performance.
<b>Easily Mixes</b>	Can be applied simultaneously with other products, allowing MCT to become a carrier for all.	Blends well with other nutrients and most other crop inputs. Makes products applied more efficient and effective.
<b>Increased Nutrient Availability</b>	Resists soil tie-up and releases nutrients that are blocked.	More of the applied nutrient is utilized by the plant, which increases plant quality and yield.

*“Farmers see the Micro Carbon Technology<sup>®</sup> working in their fields. They are seeing stronger, healthier plants that they don’t see with other products.”*

—Adolfo Meneses





## Products

### SUSTAINABLE SOIL FERTILITY

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FERTIL SOIL®	ENCAPSALT®
FERTIL HUMUS®	KLEENUP™
ZAP®	SURF-MAX®

### OPTIMAL GROWTH MANAGEMENT

---

VITOL®	ACTIVOL®	GOLDEN PRO®
BREAKOUT®	CROP-GARD®	SILI-MAX®
JACKPOT® (YIELD-MAX™)	D-FEND®	

### MACRONUTRIENTS

---

SUPER NITRO®	LUCKY 7®	BUFFER K®
SUPER PHOS® (PHOS-MAX®)	38 SPECIAL®	SIL-K®
SUPER POTASSIUM®	C-PHOS™	AN-MAX®

### SECONDARY MACRO AND MICRONUTRIENTS

---

MAX PAK®	IRO-MAX®	COPPER	PUR CAL®
44 MAG®	BORO-PRO®	MANGANESE	SULFUR
Z-MAX®	COBALT	MOLYBDENUM	
CALCIUM	COMOL™	NICKEL	

### ZERO-RESIDUE CROP PROTECTION

---

PROMAX®  
PROUD 3®

### LIQUID CARBON-RICH ORGANIC ACIDS

---

X-TEND®  
X-TEND® B  
FULVI PRO® 10%/20%  
HUMA PRO® 16

### DRY CARBON-RICH ORGANIC ACIDS (HUMA BURST®)

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MICROHUMIC®	PRILLED
PULVERIZED	K HUME®
GREENS	MICROMATE
1-3MM	SOLUBLE POWDER
2-6MM	STABLESOL™
6MM(-)	

# *Sustainable* **SOIL FERTILITY**

Huma Gro® sustainable soil fertility products improve the quality of soil by providing the nutrients necessary to increase the activity and diversity of beneficial bacteria and fungi in crop fields. This increased microbial community delivers many benefits to the soil, such as improving soil physical properties and increasing nutrient availability. More importantly, these organisms break down available organic matter into nutrient-rich humus—the key element in highly productive soils.

Other product benefits include the capacity to buffer extremes of pH, EC, and salt in the soil to make nutrients available under conditions in which they would not normally be available or would be reduced.

## ***Benefits of Investing in Your Soils***

By improving soil structure, Huma Gro® increases moisture retention and aeration, bringing more effective distribution of water, oxygen, and nutrients directly to the plants' root zones. Improved root mass development promotes better seedling emergence and faster starts. Extensive root growth, particularly in the early stages of plant development, helps increase plant tolerance to adverse environmental conditions, even during periods of extreme heat or drought.





# FERTIL SOIL® (FORMERLY SOIL-MAX™)

*The Solution for Building a Living Soil*

Huma Gro® FERTIL SOIL® carbon-complexed with Micro Carbon Technology® improves soil structure and feeds the beneficial bacterial activity in the soil. This balances the carbon-oxygen ratio, creating a carbon-rich soil that allows the soil and rhizosphere interface to be more active. FERTIL SOIL® increases availability of nutrients blocked by mineralization in soils. FERTIL SOIL® indirectly helps to diminish the stress of saline soils and pH extremes.

## BENEFITS:

- *Activates beneficial aerobic bacteria and actinomycetes*
- *Aerates soils and flocculates clay particles*
- *Increases water-use efficiency*
- *Buffers salts in high alkaline, high salinity soils*
- *Increases nutrient availability for easier plant uptake*
- *Stimulates root-mass development*

## GUARANTEED ANALYSIS: 5-0-0

Total Nitrogen (N).....	5.00%	Manganese (Mn).....	0.05%
5.00% Urea Nitrogen		0.05% Chelated Manganese (Mn)	
Iron (Fe).....	0.10%	Zinc (Zn).....	0.05%
0.10% Chelated Iron (Fe)		0.05% Chelated Zinc (Zn)	

**Derived From:** Urea, Iron HEDTA, Manganese EDTA, Zinc EDTA. Chelating agents are Hydroxyethylethylenediaminetriacetate and Ethylenediaminetetraacetate.

## APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	N/A	1–3 qt/ac 2.5–7.5 L/ha	Apply 15–20 days prior to planting and as needed during the crop cycle.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro® Rep for more information.

*“One of the benefits of Fertil Soil® is that it helps to create a greater bio-mass, but it also helps create a more diverse bio-community; you’re going to get several different forms of beneficial bacteria that proliferate in an environment that’s created by Fertil Soil®.*

—Lyndon Smith



# FERTIL HUMUS®

*The Solution for Building Soil Humus*

Huma Gro® FERTIL HUMUS® carbon-complexed with Micro Carbon Technology® has the nutrients necessary to feed beneficial fungal activity in the soil and to increase carbon and nutrient availability in the root zone. FERTIL HUMUS® enhances aerobic decomposition of organic matter and builds a humus-rich soil, which releases nutrients tied up in organic matter. FERTIL HUMUS® also helps buffer the plant from the effects of heavy metals and toxic substances in the soil.



## BENEFITS:

- *Aids in the decomposition of organic residues in soils*
- *Increases recycling of nutrients tied up in organic matter*
- *Aids in improving soil condition*
- *Helps to buffer harsh chemicals and degrade toxic compounds in soil*
- *Increases soil water retention*
- *Stimulates root growth*

## GUARANTEED ANALYSIS: 24-0-0

Total Nitrogen (N).....	24.00%	Manganese (Mn).....	0.05%
5.75% Ammoniacal Nitrogen		0.05% Chelated Manganese (Mn)	
5.75% Nitrate Nitrogen		Zinc (Zn).....	0.05%
12.50% Urea Nitrogen		0.05% Chelated Zinc (Zn)	
Iron (Fe).....	0.10%		
0.10% Chelated Iron (Fe)			

**Derived From:** Urea, Ammonium Nitrate, Iron HEDTA, Manganese EDTA, Zinc EDTA. Chelating agents are Hydroxyethylethylenediaminetriacetate and Ethylenediaminetetraacetate.

## APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	N/A	1–3 qt/ac 2.5–7.5 L/ha	Apply 15–20 days prior to planting and anytime during the crop cycle.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro® Rep for more information.

*"I use Huma Gro® because it makes my corn taste better! I also have less dust in my bins; the kernels hold together far better."*

—Dan Hilger



# ZAP®

Huma Gro® ZAP® carbon-complexed with Micro Carbon Technology® is an organic-based formulation of nutrients for feeding the native beneficial soil microbial balance. ZAP® feeds a strong, vigorous soil biology, which indirectly results in the natural improvement of soil health.

- *Improves plant vigor*
- *Improves beneficial soil microbial activity*
- *Establishes soil biological balance and species diversity*
- *Addresses microbial challenges related to cut- or leveled-ground soil infertility*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	N/A	0.5–1 gal/ac 5–10 L/ha	Apply 15–20 days prior to planting and as needed during the crop cycle. <b>Apply 7–10 days after a final PROMAX® treatment to re-establish a healthy soil biology.</b>

# ENCAPSALT®

Huma Gro® ENCAPSALT® combines nutrients and surfactants on an MCT base, which helps diminish salt stress in the root zone. ENCAPSALT® is also used to break free the Na ion, allowing irrigations to move salts down into the soil profile. It aids with water penetration and resolves crusty, hard soils.

### TREATS THE FOLLOWING PROBLEMS:

- *Salt damage or toxicity to plants*
- *Anaerobic soil conditions*
- *Low soil organic matter*
- *Poor water penetration*
- *Inhibited root growth, small root mass*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	N/A	1–3 qt/ac 2.5–7.5 L/ha	Apply 15–20 days prior to planting and as needed during the crop cycle.

# KLEENUP™

Huma Gro® KLEENUP™ is a nutrient and soil surfactant formulation with Micro Carbon Technology® that creates a favorable soil environment, improves aeration, and increases the water-holding capacity of soils. KLEENUP™ buffers heavy metals from being toxic to roots and breaks the hydrocarbon chains to speed up the degradation and breakdown of chemical residues.

### BENEFITS OF USE:

- *Aids in breakdown of chemical and petroleum contaminants in soil*
- *Aids in detoxification of plants*

### TREATS THE FOLLOWING PROBLEMS:

- *Chemical or toxic compound contamination*
- *Residue from pesticides or herbicides*
- *Petroleum-based spills or leaks*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	N/A	0.5–1 gal/ac 5–10 L/ha	Apply 15–20 days prior to planting and as needed during the crop cycle.

## GUARANTEED ANALYSIS: 8-0-0

Total Nitrogen (N) ..... 8.00%  
3.0% Ammoniacal Nitrogen  
2.0% Nitrate Nitrogen  
3.0% Urea Nitrogen  
Sulfur (S) ..... 1.00%  
1.00% Combined Sulfur (S)  
Iron (Fe)..... 0.10%  
0.10% Chelated Iron (Fe)  
Manganese (Mn) ..... 0.05%  
0.05% Chelated Manganese (Mn)  
Zinc (Zn)..... 0.05%  
0.05% Chelated Zinc (Zn)



**Location:** Spain  
**Crop:** Broccoli  
**HG Products:** ZAP®  
**Results:** Healthier plant, increased size and yield



## GUARANTEED ANALYSIS: 5-0-0

Total Nitrogen (N) ..... 5.00%  
5.0% Urea Nitrogen



*ENCAPSALT® buffers salts in highly alkaline soils, stimulates biomass development, and aerates and increases water penetration in soils.*



## GUARANTEED ANALYSIS: 15-0-0

Total Nitrogen (N) ..... 15.00%  
3.75% Ammoniacal Nitrogen  
3.50% Nitrate Nitrogen  
7.75% Urea Nitrogen  
Iron (Fe)..... 0.05%  
0.05% Chelated Iron (Fe)  
Manganese (Mn) ..... 0.03%  
0.03% Chelated Manganese (Mn)  
Zinc (Zn)..... 0.03%  
0.03% Chelated Zinc (Zn)



# SURF-MAX®

## Water Conservation and Surfactant Technology for Agriculture

Huma Gro® SURF-MAX® carbon-complexed with Micro Carbon Technology® is a blend of nonionic surfactants designed to improve both penetration and lateral movement of water within the root zone and increase soil moisture retention. By improving the infiltration and distribution of water in the soil profile, SURF-MAX® ensures that growers can increase yields while improving water use efficiency.

- Use up to 25% less irrigation water while attaining better water movement through the soil, more effectively providing moisture and delivering water-carried nutrients.
- Due to the complexed Micro Carbon Technology®, the benefits of carbon are carried directly through the soil to the root zone, enabling plants to more effectively absorb nutrients.
- SURF-MAX® is fully biodegradable, non-hazardous, non-phytotoxic, and highly compatible with existing chemistries.
- Great for growers of strawberries, tomatoes, peppers, melons, cotton, potatoes, fruit trees, olives, lettuce, carrots, blueberries, etc.

### When to Apply:

- Wherever drought conditions or water restrictions are present; when water conservation is important
- When planting in light-sandy, sandy-loam, or hydrophobic soils

#### INITIAL RATE

16–32 ounces/ac; 1.25–2.5 L/ha

#### SUSTAINABLE RATE

8–12 ounces/ac, 0.5–0.75 L/ha



Watch a Surf-Max® Hydration Bench Test on YouTube at [http://bit.ly/Surf-Max\\_Hydration](http://bit.ly/Surf-Max_Hydration)

Dipropylene Glycol Methyl Ether.....2.25%  
Inert Ingredients..... 97.75%



SUBSCRIBE TO

THE

# Huma Gro<sup>®</sup> Farmer

★ P O D C A S T ★

[HUMAGRO.COM/PODCASTS/](https://humagro.com/podcasts/)

*Where we discuss crop nutrition and crop protection with experts in the field. We interview agronomists, certified crop advisors, and Huma Gro<sup>®</sup> distributors and customers about proven Huma Gro<sup>®</sup> programs and strategies for growing premium, high-yield crops.*



AVAILABLE AT:

APPLE & GOOGLE PODCASTS • SPOTIFY • ANDROID • STITCHER • TUNEIN



*Optimal*

## **GROWTH MANAGEMENT**

Huma Gro® offers high quality, easy-to-use plant growth management nutrient products that may indirectly cause the plant to naturally produce beneficial hormones. By enhancing nutrient uptake through plants' roots or leaves, Huma Gro® Optimal Growth Managers help improve flowering, budding, fruit set, fruit size, and maturity. This helps you achieve more uniform maturity and consistent size, resulting in improved crop quality and yields. Huma Gro® products add to plant size and vigor, even late in the season, which diminishes the effects of environmental stresses. These benefits combine to make you more efficient, more productive, and more profitable at harvest.



*"I use Vitol® with Roundup®. It helps my plants grow stronger while the MCT allows the Roundup® to get into the weeds far more easily, enhancing its effectiveness. "*

*—Dan Hilger*



# VITOL®

## The Solution for Vigorous Plant Growth

Huma Gro® VITOL® carbon-complexed with Micro Carbon Technology® feeds the natural metabolic processes within the plant for vegetative development and fruit sizing. It increases the nutrient uptake of the plant and smoothly transitions the plant through its growth stages. It also improves plant recovery from environmental stresses during peak crop demand periods. When soil-applied, VITOL® provides necessary nutrients for root growth and elongation that are critical in tap root crops.



### BENEFITS:

- *Increases foliar growth at emergence*
- *Maintains late-season growth and vigor*
- *Increases fruit size*
- *Improves uniformity of fruit size*
- *Gives plants energy*

### GUARANTEED ANALYSIS: 8-16-4

Total Nitrogen (N) ..... 8.00%  
 1.10% Ammoniacal Nitrogen  
 6.90% Urea Nitrogen  
 Available Phosphate (P<sub>2</sub>O<sub>5</sub>)..... 16.00%  
 Soluble Potash (K<sub>2</sub>O) ..... 4.00%  
 Sulfur (S) ..... 1.00%  
 1.00% Combined (S)  
 Iron (Fe)..... 0.10%  
 0.10% Chelated Iron (Fe)  
 Manganese (Mn) ..... 0.05%

0.05% Chelated Manganese (Mn)  
 Zinc (Zn)..... 0.05%  
 0.05% Chelated Zinc (Zn)

**Derived From:** Urea, Phosphoric Acid, Potassium Carbonate, Ammonium Sulfate, Iron Sulfate, Zinc Sulfate, Manganese Sulfate. Chelating agents are Hydroxyethylethylenediaminetriacetate and Ethylenediaminetetraacetate.

### APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	1–2 qt/ac 2.5–5 L/ha	Apply at least 7 days apart as needed during the crop cycle.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro® Rep for more information.

*“I know a potato grower who used Vitol® on 20 acres and a competitor's product on another 20 acres. He applied 1 gal/acre of the Vitol®, as compared to 4 gal/acre of the other product. By the end of the season, he had over a \$12k loss on the acres where he used the competitor's products. Vitol® not only increased his yield, it increased the distribution in red potatoes that is needed to make money.”*

—Rudy Allen





# BREAKOUT®

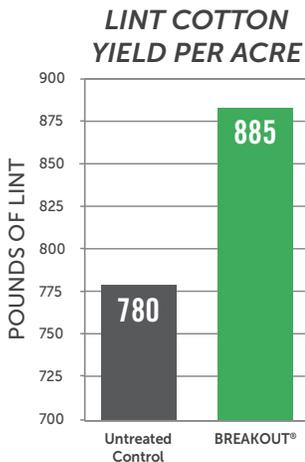
*The Solution for Improved Flowering and Fruiting of Plants*

Huma Gro® BREAKOUT® carbon-complexed with Micro Carbon Technology® is designed to feed the natural metabolic process within the plant for enhanced bud initiation, flowering, and fruit set. When applied to soils, BREAKOUT® is effective at providing needed nutrients for fibrous root growth and enhanced root mass development.

## BENEFITS:

- Provides energy needed to push "bud-break" uniformly
- Accelerates the emergence of fruiting buds
- Provides energy needed to promote uniform flowering, increase the number of flowers, and improve fruit set
- Acidifies/buffers spray solutions (pH 2.0)
- May be applied with other foliar nutrients for maximum effect on flowering and fruit set
- Maximizes new root growth when used at seeding or when transplanting

[See page 24 for additional field report data on Breakout®](#)



*Cotton Trial in Missouri, USA  
BREAKOUT® versus an untreated control.  
Single application of 1 qt/acre.  
Ask a Huma Gro® rep to see the full study.  
Result: 13.5% YIELD INCREASE*

## GUARANTEED ANALYSIS: 4-14-3

Total Nitrogen (N) .....	4.00%	Available Phosphate (P <sub>2</sub> O <sub>5</sub> ).....	14.00%
0.55% Ammoniacal Nitrogen		Soluble Potash (K <sub>2</sub> O) .....	3.00%
3.45% Urea Nitrogen			

Derived From: Urea, Phosphoric Acid, Potassium Carbonate, Ammonium Sulfate.

## APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	1–2 qt/ac 2.5–5 L/ha	Apply at least 7 days apart as needed during the crop cycle.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro® Rep for more information.



*"A grower brought in a picture of his peppers that were struggling. We gave him some Huma Gro® products that we determined could be helpful. The very next day he came back and told us he had seen improvements!"*

—Doug Henderson



# JACKPOT® (YIELD-MAX™)

*The Solution for Increasing Quality of Yields*

Huma Gro® JACKPOT® carbon-complexed with Micro Carbon Technology® is a concentrated formulation of potassium and boron that feeds the metabolic processes necessary for uniform fruit maturity and improved shelf life, resulting in higher quality fruit. Potassium in JACKPOT® promotes translocation of nutrients, proteins, carbohydrates, and sugars from leaves and stems into the fruit. JACKPOT® may indirectly improve yield, size, color, quality, and uniformity of all crops.



## BENEFITS:

- Promotes sizing and maturity of crops
- Enhances the movement of carbohydrates and proteins from leaves, stems, and roots to the harvested portion of the crop
- Improves quality, shippability, and shelf life of produce
- JACKPOT® should always be applied with CALCIUM for maximum results



## GUARANTEED ANALYSIS: 0-1-20

Available Phosphate (P<sub>2</sub>O<sub>5</sub>).....1.0%  
 Soluble Potash (K<sub>2</sub>O) ..... 20.0%  
 Boron (B).....0.5%

Derived From: Phosphoric Acid, Potassium Hydroxide, Boric Acid.

## APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	NA	Apply 3–4 weeks prior to defoliation or harvest.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro® Rep for more information.

*“We have had great success getting increased yields in Arkansas, Missouri, and Mississippi using Huma Gro® products. We’ve seen soybean yields go up 16–17 bushels/acre, rice yields increased up to 10 bushels/acre, and cotton yields increased 100–150 lb/acre.”*

—Mark Gregory



# ACTIVOL®

Huma Gro® ACTIVOL® carbon-complexed with Micro Carbon Technology® is a concentrated formulation of nutrients and refined plant oils that increases plant tolerance to environmental stresses and facilitates nutrient uptake and translocation throughout the plant.

- *Enhances plant's natural ability to tolerate environmental stresses*
- *Enhances natural activity to aid in plant vigor and strength*
- *Organically complexes foliar nutrients*
- *Will tank mix with sulfur-copper fungicidal sprays and other chemical inputs*
- *Minimizes leaf burn or phytotoxicity associated with foliar nutrient sprays*
- *Usually eliminates the need for wetting agents*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	1–2 qt/ac 2.5–5 L/ha	Apply at least 7 days apart as needed during the crop cycle.

# CROP-GARD®

Huma Gro® CROP-GARD® carbon-complexed with Micro Carbon Technology® provides nutrients and refined plant oils for natural plant vigor. CROP-GARD® also achieves balanced plant nutrition for better plant color, growth, development, and production.

- *Enhances plant's natural ability to tolerate environmental stresses through improved nutritional balance*
- *Will tank mix with sulfur-copper fungicidal sprays and most chemical fungicide formulations*
- *Provides essential plant nutrients*
- *Minimizes leaf burn or phytotoxicity associated with foliar nutrient sprays*
- *Usually eliminates the need for wetting agents or sticker spreaders*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	0.5–1 gal/ac 5–10 L/ha	Apply at least 7 days apart as needed during the crop cycle.

# D-FEND®

Huma Gro® D-FEND® carbon-complexed with Micro Carbon Technology® is a foliar formulation of nutrients and refined plant oils that facilitates nutrient uptake and translocation throughout the plant.

- *Provides essential plant nutrients*
- *Nutrients plus natural oils and extracts improve plant tolerance of environmental stresses*
- *Tank-mixes with most chemical pesticides*
- *Delivers maximum performance with no negative environmental impact*
- *Can carry any combination of Huma Gro® nutrients*
- *Minimizes leaf burn or phytotoxicity associated with foliar nutrient sprays*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	1–2 qt/ac 2.5–5 L/ha	Apply at least 7 days apart as needed during the crop cycle.

## GUARANTEED ANALYSIS: 0-5-0

Available Phosphate ( $P_2O_5$ )..... 5.00%  
Iron (Fe)..... 0.10%  
0.10% Chelated Iron (Fe)  
Manganese (Mn)..... 0.05%  
0.05% Chelated Manganese (Mn)  
Zinc (Zn)..... 0.05%  
0.05% Chelated Zinc (Zn)



## GUARANTEED ANALYSIS: 1-7-1

Total Nitrogen (N) ..... 1.00%  
1.00% Urea Nitrogen  
Available Phosphate ( $P_2O_5$ ).....7.00%  
Soluble Potash ( $K_2O$ ) ..... 1.00%  
Sulfur (S) ..... 2.00%  
Copper (Cu)..... 0.20%  
Manganese (Mn) ..... 0.50%  
Zinc (Zn)..... 2.00%

*"My grape crop has bigger leaves, no deficiencies, and better root development than before. I can also say that the quality has gone up. I have more bunches that are longer than ever before. I'm very happy."*

—Grower in China



## GUARANTEED ANALYSIS: 0-5-0

Available Phosphate ( $P_2O_5$ )..... 5.00%  
Iron (Fe)..... 0.10%  
0.10% Chelated Iron (Fe)  
Manganese (Mn)..... 0.05%  
0.05% Chelated Manganese (Mn)  
Zinc (Zn)..... 0.05%  
0.05% Chelated Zinc (Zn)



# GOLDEN PRO®

Huma Gro® GOLDEN PRO® carbon-complexed with Micro Carbon Technology® is a unique formulation that provides plants with the nutrients to feed the metabolic processes necessary for improved fruit sizing, quality, and yield. GOLDEN PRO® enables N-P-K and calcium to be combined in a stable nutrient formulation that is effective and efficient while maintaining individual characteristics of each element.

## BENEFITS OF USE:

- *Increases fruit size and quality*
- *Improves uniformity of fruit size*
- *Improves sugar levels (Brix)*

## WHEN TO APPLY:

- *To improve fruit shape and size*
- *To improve levels of N, P, K, and calcium*
- *To increase sugar levels in fruit*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	1–2 qt/ac 2.5–5 L/ha	Apply at least 7 days apart as needed during the crop cycle.

# SILI-MAX®

Huma Gro® SILI-MAX® carbon-complexed with Micro Carbon Technology® is a highly available source of silica, which is essential in grains and grasses for stronger heads, shoots, and blades. It increases the strength and rigidity of the plant cells to prevent lodging.

- *Essential in grains, grasses, and turf for stronger heads, shoots, and blades*
- *Increases the strength and rigidity of plant cells*
- *Strengthens cell walls to prevent lodging*

- *Reduces the tendency of crops and turf to wilt during the initial stages of drought*
- *Increases plant resistance to environmental stresses*

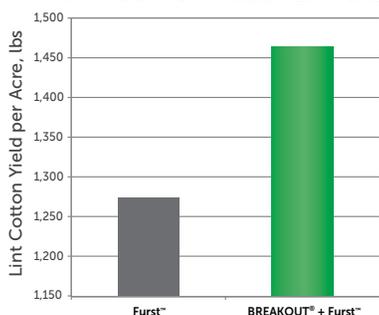
CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	4 oz–1 cup/ac 0.3–0.6 L/ha	1 cup–1 pint/ac 0.6–1.25 L/ha	Apply at least 7 days apart as needed during the crop cycle.

## Field Report Results

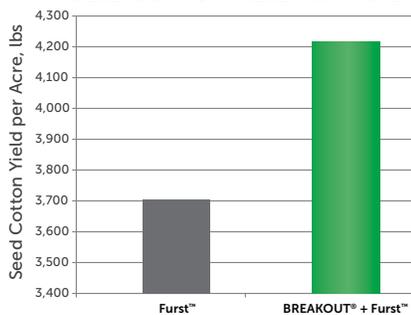
### Breakout® on Cotton: Johnson Farms

A field trial using treatment product Furst™ alone versus using Huma Gro® BREAKOUT® + Furst™ on a Johnson Farms Inc. cotton crop in Glendale, Arizona. One application of BREAKOUT® was applied at 1 qt/acre.

LINT COTTON YIELD PER ACRE



SEED COTTON YIELD PER ACRE



Huma Gro® BREAKOUT® yielded **191 lbs more lint/acre (15% INCREASE)** and **513**



**lbs of additional seed cotton/acre.**

Ask a Huma Gro® rep to see the full field report.

## GUARANTEED ANALYSIS: 5-23-4

Total Nitrogen (N) ..... 5.00%  
5.00% Nitrate Nitrogen  
Available Phosphate (P<sub>2</sub>O<sub>5</sub>)..... 23.00%  
Soluble Potash (K<sub>2</sub>O) ..... 4.00%  
Calcium (Ca) ..... 4.00%



## GUARANTEED ANALYSIS: 0-0-0

Silica (SiO<sub>2</sub>) ..... 20.00%

*"Farmers in Mississippi raising watermelons saw Huma Gro® products increase their yields over that of any other products. They are now only using HG products and they are very excited about the results."*

—Mark Gregory



*" [Thanks to Huma Gro®] we have managed to get fruits with excellent finishing in terms of size, color, and taste, and, more importantly, of consistency,' says the production manager. Specifically, the color of the grape harvested ranged between RG1.5 and RG2, the Brix degree reached 16, and the average diameter was between 1.17 in (29.9 mm) (J) to 1.18 in (30 mm) (JJ). In terms of quality, 85% of the grape was premium, and sold at a high price per box. The final volume was significant, as it reached 2300 boxes per hectare. 'It was a show. Everybody wanted to work there,' remembers Uculmana, after pointing out that in other table grape areas, the daily average is 40 boxes/picker, while in Olaechea it was 100 in the last season."*

—Red Agricola, Apr 2015, Issue 21 pg 28–29



# Ultra-Efficient

## MACRO NUTRIENTS

Now you can improve the uptake and efficiency of N-P-K applications, thanks to Huma Gro® macronutrient fertilizer products. Our concentrated and complex formulations maximize nutrient availability for improved plant quality. The added efficiency of Huma Gro® products will let you achieve superior results with less fertilizer—and lower fertilizer expense. Thus, in addition to saving money, you reduce the amounts of N, P, and K residue, which is better for the environment and more sustainable for the future.

Your Huma Gro® representative can work with you to determine the best combinations and concentrations of macronutrients, secondary nutrients, and micronutrients that will be most beneficial for your crop.



*“Using Huma Gro®, my production has increased 30%! I am also getting 5% higher prices because of better quality. My peppers are spicier, longer, have better skin, and are generally far more healthy.”*

*—Pepper grower in China*



# SUPER NITRO<sup>®</sup>

*The Solution for Improving Nitrogen Availability*

Huma Gro<sup>®</sup> SUPER NITRO<sup>®</sup> with Micro Carbon Technology<sup>®</sup> is a carbon-complexed nitrogen source that can be foliar-applied, according to label directions, without the risk of phytotoxicity. It can also be soil-applied for nitrogen uptake while keeping it stable in the root zone. It reduces nitrogen losses from leaching and volatilization. SUPER NITRO<sup>®</sup> enhances cellular respiration that promotes a longer productive crop life.



## BENEFITS:

- *Resists nitrogen leaching and volatilization to remain water soluble and available to plant roots*
- *Provides quick crop response and can be applied just prior to actual crop need*
- *Moves with irrigation water to aid in proper placement*
- *Can be tank-mixed to improve availability of other nitrogen solutions*
- *Is non-salt-forming*

## GUARANTEED ANALYSIS: 30-0-0

Total Nitrogen (N).....30.00%

Derived From: Urea and Ammonium Nitrate.



## APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	0.5–1.0 gal/ac 5–10 L/ha	5–10 gal/ac 50–100 L/ha	Apply as needed.



\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro<sup>®</sup> Rep for more information.

*“Plants can use the incredibly small, light MCT molecules so much easier than the large humic acid molecules. In a side-by-side comparison, MCT always comes out on top.”*

—Rudy Allen





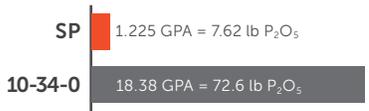
# SUPER PHOS® (PHOS-MAX®)

The Solution for Maximum Phosphate Availability

Huma Gro® SUPER PHOS® carbon-complexed with Micro Carbon Technology® can be foliar-applied, according to label directions, without the risk of phytotoxicity. When soil-applied, it keeps phosphate available and soluble in the soil solution for rapid uptake by plant roots without being blocked by clays, metal ions, or organic matter. Phosphate encourages the production of amino acids, proteins, and carbohydrates necessary for cellular division.

## RESEARCH:

**SUPER PHOS® has been proven to be up to 15 TIMES more efficient than conventional P fertilizer.**



Amount of P applied to corn via Super Phos® (SP) and 10-34-0.

**A field trial on corn conducted by SW Minnesota State University concluded that a little over 1 gal of Super Phos® delivered the same equivalent of P as 18 gal of 10-34-0—AND .increased corn yield by 99 bu/ac This also represented a 40% savings on fertilizer cost. Ask a Huma Gro® rep to see the full study: (Huma Gro® Super Phos® on Corn 15x More Efficient . . .).**

## BENEFITS:

- Resists "tie-up" with calcium or aluminum to remain water soluble and available to plant roots
- Moves with irrigation water to aid in proper placement
- Can be tank-mixed to improve availability of other phosphorus solutions
- Is non-salt-forming
- Aids in phosphorus uptake in cold or waterlogged soils
- Is useful in the cleaning and maintenance of drip irrigation systems
- Aids in phosphorus uptake in high pH or calcareous soils

## GUARANTEED ANALYSIS: 0-50-0

Available Phosphate (P<sub>2</sub>O<sub>5</sub>)..... 50.00%

Derived From: Phosphoric Acid.

## APPLICATION:



CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	2 qt–1 gal/ac 5–10 L/ha	2–3 gal/ac 20–30 L/ha	Apply as needed.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro® Rep for more information.

**"Using Super Phos®, we noticed the root growth 12 days after the application. Based on our evaluations, we initially had 45-hair white root formation and, just two weeks after applying Super Phos®, we counted up to 150 hairs."**

—Carlos Choque



# SUPER POTASSIUM<sup>®</sup> (FORMERLY SUPER K<sup>™</sup>)

*The Solution for Maximum Potassium in Plants*



Huma Gro<sup>®</sup> SUPER POTASSIUM<sup>®</sup> with Micro Carbon Technology<sup>®</sup> is a carbon-complexed potassium source that can be foliar-applied, according to label directions, without the risk of phytotoxicity. It can also be soil-applied for potassium uptake while keeping it stable in the root zone. SUPER POTASSIUM<sup>®</sup> promotes internal cellular strength for fruit development and maturity, and it helps to regulate the movement of water and nutrients within the plant.

## BENEFITS:

- *Resists tie-up in the soil and remains available through the plant root system*
- *Provides quick crop response and can be applied just prior to actual crop need*
- *Can be tank-mixed to improve availability of other potassium solutions*
- *Is non-salt-forming and does not contain chloride*
- *Aids in potassium uptake in heavy clay, compacted, or high-salinity soils*
- *Can be mixed with nitrogen solutions for easy application*
- *Is completely water soluble and can be water-incorporated*

## GUARANTEED ANALYSIS: 0-0-40

Soluble Potash (K<sub>2</sub>O).....40.00%

Derived From: Potassium Hydroxide.



## APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	2 qt–1 gal/ac 5–10 L/ha	2–3 gal/ac 20–30 L/ha	Apply as needed.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro<sup>®</sup> Rep for more information.



*“The liquid MCT base makes the difference! You see it in the blueberry soil samples over that of dry fertilizer. When the blueberries leaf out, we are not seeing the phosphorus deficiencies we used to see.*

*Super Phos<sup>®</sup> doesn't tie up in the soil—that means the plant can actually use it!”*

—Jim Herndon



# LUCKY 7®

Huma Gro® LUCKY 7® is a broad-spectrum liquid nutrient formulation carbon-complexed with Micro Carbon Technology®. LUCKY 7® is a complete nutrient package containing most macro- and micronutrients. LUCKY 7® provides excellent foliar and soil nutrition. This is a complete nutrient product designed for all types of crops, trees, vines, turf, and ornamentals in a wide range of conditions. It provides an excellent foundation to support vigorous growth.

- *“Leaf friendly” to ensure maximum uptake*
- *Stimulates root growth in seedlings/transplants*
- *Improves overall plant nutrient value and vigor*
- *Excellent balanced nutrient blend for all crops*
- *Complexed form for easy, rapid uptake*
- *Blended for all soil types and regions*
- *Improves tolerance to environmental stresses*
- *Excellent product for fertigation*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	1–2 gal/ac 10–20 L/ha	Apply as needed.

# 38 SPECIAL®

Huma Gro® 38 SPECIAL® carbon-complexed with Micro Carbon Technology® is designed for a wide range of uses and can be applied to promote germination, fruiting, and crop vigor. It is great as a starter mix.

- *Stimulates root growth in seedlings and transplants*
- *Improves plant vigor*
- *Increases phosphorus levels that promote flowering and fruit set*
- *Organically complexed and salt-buffered to reduce leaf burn and phytotoxicity*
- *Foliar nutrients are “leaf friendly” to ensure maximum uptake and translocation*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	0.5–1 gal/ac 5–10 L/ha	Apply as needed.



## GUARANTEED ANALYSIS: 7-7-7

Total Nitrogen (N) .....7.00%  
1.5% Ammoniacal Nitrogen  
3.0% Urea Nitrogen  
2.5% Nitrate Nitrogen  
Available Phosphate (P<sub>2</sub>O<sub>5</sub>).....7.00%  
Soluble Potash (K<sub>2</sub>O) .....7.00%  
Magnesium (Mg)..... 0.50%  
Sulfur (S) (Combined) ..... 1.00%  
Boron (B)..... 0.02%  
Cobalt (Co) .....0.01%  
Iron (Fe)..... 0.10%  
Manganese (Mn) ..... 0.05%  
Molybdenum (Mo).....0.006%  
Zinc (Zn)..... 0.05%



## GUARANTEED ANALYSIS: 4-14-12

Total Nitrogen (N) ..... 4.00%  
4.00% Ammoniacal Nitrogen  
Available Phosphate (P<sub>2</sub>O<sub>5</sub>)..... 14.00%  
Soluble Potash (K<sub>2</sub>O) ..... 12.00%  
Sulfur (S) ..... 8.00%  
8.00% Combined Sulfur (S)

*"MCT sets the standard  
for everybody. . . . It is  
leaps and bounds above  
every other technology  
out there!"*

—Mark Gregory



# BUFFER K<sup>®</sup>

Huma Gro<sup>®</sup> BUFFER K<sup>®</sup> carbon-complexed with Micro Carbon Technology<sup>®</sup> is a potassium product with a more neutral pH (9.0–10.0) that is complexed to maximize potassium uptake by plants. BUFFER K<sup>®</sup> promotes internal cellular strength for fruit development and maturity, and it helps to regulate the movement of water and nutrients within the plant.

- *Resists tie-up in the soil and remains available through the plant root system*
- *Provides quick crop response and can be applied just prior to actual crop need*
- *Is non-salt-forming and does not contain chloride*
- *Can be tank-mixed to improve availability of other nutrient solutions*
- *Aids in potassium uptake in heavy clay, compacted, or high-salinity soils*
- *Can be mixed with nitrogen solutions*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	0.75–1.5 gal/ac 7.5–15 L/ha	3–4.5 gal/ac 30–45 L/ha	Apply as needed.

# C-PHOS<sup>™</sup>

Huma Gro<sup>®</sup> C-PHOS<sup>™</sup> carbon-complexed with Micro Carbon Technology<sup>®</sup> nourishes crops and corrects calcium and phosphorus deficiencies in a uniquely clear and stable formulation that retains the effectiveness and efficiency of the individual elemental components.

- *Resists “tie-up” with calcium or aluminum to remain water soluble and available to plant roots*
- *Moves with irrigation water for proper placement*
- *Can be tank-mixed to improve availability of other nutrient solutions*
- *Is non-salt-forming*
- *Aids in phos uptake in cold/waterlogged soils*
- *Is useful in the cleaning and maintenance of drip irrigation systems*
- *Aids phos uptake in high pH or calcareous soils*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	0.5–1 gal/ac 5–10 L/ha	2–3 gal/ac 20–30 L/ha	Apply as needed.



## GUARANTEED ANALYSIS: 0-0-25

Soluble Potash ( $K_2O$ ) ..... 25.00%



## GUARANTEED ANALYSIS: 4-25-0

Total Nitrogen (N) ..... 4.00%  
4.00% Nitrate Nitrogen  
Available Phosphate ( $P_2O_5$ ) ..... 25.00%  
Calcium (Ca) ..... 5.00%

*"We saw amazing results using Vitol®, Super Phos®, and Super Potassium® on pineapple crops in Costa Rica. We had uniform, bigger fruit and an increase in production of 20%–30% per acre."*

—Adolfo Meneses



# SIL-K<sup>®</sup>

Huma Gro<sup>®</sup> SIL-K<sup>®</sup> carbon-complexed with Micro Carbon Technology<sup>®</sup> provides the potassium and silica essential in all crops for stronger fruit holding and thicker stems and leaves. It increases the strength and rigidity of the plant cells, resulting in the prevention of premature fruit drop or lodging. It increases fruit quality and shelf life.

- *Increases the strength and rigidity of the plant cells*
- *Reduces the tendency of plants to wilt during the initial stages of drought*
- *Indirectly increases resistance to environmental stresses*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	0.5–1 pt/ac 0.6–1.25 L/ha	0.5–1 qt/ac 1.25–2.5L/ha	Apply as needed.

# AN-MAX<sup>®</sup>

Huma Gro<sup>®</sup> AN-MAX<sup>®</sup> carbon-complexed with Micro Carbon Technology<sup>®</sup> is derived from ammonium nitrate, a nitrogen source that is more immediately available to plants, slower to volatilize into the atmosphere, and less affected by weather conditions than urea. AN-MAX<sup>®</sup> can be foliar-applied, according to label directions, without the risk of phytotoxicity. It can also be soil-applied for nitrogen release while keeping it stable in the root zone with less nitrogen loss from leaching.

- *Resists nitrogen leaching and volatilization to remain water soluble and available to plant roots*
- *Provides quick crop response and can be applied just prior to actual crop need*
- *Moves with irrigation water to aid in proper placement*
- *Can be tank-mixed to improve availability of other nitrogen solutions*
- *Is non-salt-forming*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 gal/ac 10–20 L/ha	5–10 gal/ac 50–100 L/ha	Apply as needed.

**GUARANTEED ANALYSIS: 0-0-10**

Potassium (K<sub>2</sub>O)..... 10.00%  
Silica (SiO<sub>2</sub>)..... 5.00%



**GUARANTEED ANALYSIS: 18-0-0**

Total Nitrogen (N) ..... 18.00%



## SECONDARY MACRO

# Ultra-Efficient AND MICRONUTRIENTS

Secondary macronutrients (Magnesium, Calcium, and Sulfur) and micronutrients (Boron, Chlorine, Copper, Iron, Manganese, Molybdenum, Nickel, and Zinc) are known to play many complex roles in plant development and crop yield. In many ways, they hold the key to how well the other nutrients are used. They promote the strong, steady growth of crops that produce higher yields and increase harvest quality—maximizing a plant's genetic potential. In particular, their presence can have a great impact on root development, fruit setting and grain filling, seed viability, and plant vigor. However, these nutrients are quickly mined out of any soil that is repeatedly farmed, resulting in the need for applying ever-increasing amounts of fertilizers to get the same crop yield.

Huma Gro® offers a complete line of liquid fertilizer formulations powered by Micro Carbon Technology® (MCT) that allow a grower to foliarly apply these secondary macronutrients and micronutrients at the exact growth stage when they are most needed. The MCT improves the absorption of nutrients by crops; this improved efficiency saves money and reduces waste because less fertilizer is needed to get great results. Whatever your crop, whatever your soil, we can help you find the best nutrient solution for vigorous crop growth and optimal yield.

*“With MCT, we have something no one else has. We are able to get nutrients into the plant faster and with less product. It is without a doubt the most trend-setting technology out there!”*

—Mark Gregory



# MAX PAK®

*The Solution for Micronutrient Nutrition in Plants*

Huma Gro® MAX PAK® is a liquid micronutrient formulation containing a carbon-complexed, highly stable source of many important micronutrients. MAX PAK® is leaf friendly, salt buffered, and formulated with Micro Carbon Technology® to ensure maximum uptake and translocation of nutrients.



## BENEFITS:

- *Micronutrient source and chemical input tank-mix partner*
- *Penetrates the leaf with minimum disruption of leaf cell membranes*
- *Nutrient buffer for tank mixes*
- *Improved plant vigor and resistance to environmental stresses*
- *Contains components essential for chlorophyll, plant enzyme systems, protein and carbohydrate metabolism, photosynthesis, respiration, vitamins, and hormones*
- *Provides essential plant nutrients*

## GUARANTEED ANALYSIS:

Sulfur (S) ..... 3.00%  
 3.0% Combined Sulfur (S)  
 Boron (B)..... 0.60%  
 Cobalt (Co) ..... 0.05%  
 Copper (Cu)..... 1.00%  
 Iron (Fe)..... 2.00%  
 Manganese (Mn) ..... 1.00%

Molybdenum (Mo)..... 0.05%  
 Zinc (Zn)..... 3.50%

**Derived From:** Boric Acid, Cobalt Chloride, Sodium Molybdate, Zinc, Manganese, Copper, and Ferrous Sulfates.

## APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1 pt–1 qt/acre 1.25–2.5 L/ha	1–2 qt/ac 2.5–5 L/ha	Apply as needed.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro® Rep for more information.

*"HUMA GRO® liquid fertilizers can save up to 90% of your storage space. They come in a concentrated liquid form, instead of dry sacks as conventional products do. This also makes things easier for the worker in charge of mixing the products, as he not only has to lift less weight but also reduces his exposure to potentially harmful conventional products. 'The staff, the plant, and the environment all benefit.' "*

—Red Agricola, Apr 2015, Issue 21, pg 28-29





# 44 MAG<sup>®</sup>

## The Solution for Improved Magnesium Nutrition in Plants

Huma Gro<sup>®</sup> 44 MAG<sup>®</sup> carbon-complexed with Micro Carbon Technology<sup>®</sup> ensures maximum assimilation of magnesium, which is the essential part of the chlorophyll molecule that gives plants their green color.

### BENEFITS:

- *Magnesium is an essential core of the chlorophyll molecule*
- *Is active in the translocation of starches and necessary for sugar formation*
- *Acts as a carrier for phosphorus in the plant*
- *Regulates the uptake of other plant nutrients*
- *Enhances oil and fat formation*

### GUARANTEED ANALYSIS:

Magnesium (Mg)..... 5.00%  
 5.00% Water Soluble Magnesium (Mg)  
 Sulfur (S) ..... 5.50%  
 5.50% Combined Sulfur (S)

Derived From: Magnesium Sulfate.

### APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	0.5–1 gal/ac 5–10 L/ha	Apply as needed.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro<sup>®</sup> Rep for more information.



*"Agrícola San José (reduced) not only the size of the warehouses from 2,152 sq. ft. (200 sq. m) to 107 sq. ft. (10 sq. m), but also the irrigation system maintenance investment. 'Thanks to the Huma Gro<sup>®</sup> products' solubility, drip emitters no longer get clogged, resulting in savings for us,' – said the Agrícola San José manager."*

*—Red Agrícola, Sep 2015, Issue 25, pg 42-43*



# Z-MAX<sup>®</sup>

*The Solution for Improved Zinc Nutrition in Plants*

Huma Gro<sup>®</sup> Z-MAX<sup>®</sup> carbon-complexed with Micro Carbon Technology<sup>®</sup> ensures efficient and effective uptake of zinc, sulfur, manganese, and copper to optimize micronutrient nutrition of the plant and helps suppress certain external and internal plant stresses. This highly concentrated micronutrient solution is designed to improve plant nutrition and vigor. Z-MAX<sup>®</sup> is a great additive and tank-mix companion to pest management programs.



## BENEFITS:

- *Micronutrient source and chemical input tank mix partner*
- *N-P-K booster*
- *Nutrient buffer for tank mixes*
- *Essential components in chlorophyll, plant enzyme systems, protein and carbohydrate metabolism, photosynthesis, respiration, vitamins, and hormones*
- *Regulation of N-P-K, water, and plant solubles*



## GUARANTEED ANALYSIS:

Sulfur (S) ..... 5.00%  
 5.0% Combined Sulfur (S)  
 Copper (Cu)..... 0.50%  
 Manganese (Mn)..... 2.00%  
 Zinc (Zn)..... 8.00%

**Derived From:** Copper Sulfate, Manganese Sulfate, Zinc Sulfate.

## APPLICATION:



CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	0.5–1 gal/ac 5–10 L/ha	Apply as needed.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro<sup>®</sup> Rep for more information.

*“We saw really big yield increases in corn and milo these last couple of years using Huma Gro<sup>®</sup> products.”*

*—Mark Gregory*





# CALCIUM

## The Solution for Improved Calcium Nutrition in Plants

Huma Gro® CALCIUM carbon-complexed with Micro Carbon Technology® ensures maximum calcium uptake and translocation within the plant. CALCIUM is a required nutrient for cellular strength and growth, plant health, and fruit development.

### BENEFITS:

- *Increases stalk strength and reduces lodging in grain crops*
- *Increases shelf life and reduces shipping/storage disorders in fruits/vegetables*
- *Promotes maturity and improves fiber quality in cotton*
- *Improves plant tolerance of environmental stresses*
- *Enhances nodulation in legumes*
- *Promotes early root growth*
- *Promotes maturity and viability in seed crops*



### GUARANTEED ANALYSIS: 8-0-0

Total Nitrogen (N) ..... 8.00%  
 8.00% Nitrate Nitrogen  
 Calcium (Ca) ..... 10.00%

Derived From: Calcium Nitrate.



### APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	0.5–1 gal/ac 5–10 L/ha	Apply as needed.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro® Rep for more information.



*“These products are highly compatible and can be mixed with all kinds of nutrients without generating any antagonism whatsoever, even when dealing with complex combinations. When we visited the premises, we confirmed that they mixed pure calcium and phosphorous without problem, which is not commonly achieved.”*

—Red Agricola, Apr 2015, Issue 24, pg 11



# IRO-MAX<sup>®</sup>

*The Solution for Improved Iron Nutrition in Plants*

Huma Gro<sup>®</sup> IRO-MAX<sup>®</sup> carbon-complexed with Micro Carbon Technology<sup>®</sup> provides effective and quick iron uptake into the plant. Iron is a key micronutrient involved in photosynthesis that also enables other biochemical processes such as respiration, symbiotic nitrogen fixation, and transfer of ATP within the plant.



## BENEFITS:

- Iron is required by plants for the formation of chlorophyll
- Iron is a component of enzymes that activate other biochemical processes within plants such as respiration, symbiotic nitrogen fixation, and energy transfer
- IRO-MAX<sup>®</sup> relieves chlorotic symptoms of iron-deficient plants



## GUARANTEED ANALYSIS: 12-0-0

Total Nitrogen (N) ..... 12.00%  
12.00% Nitrate Nitrogen  
Sulfur (S) ..... 3.00%  
Iron (Fe)..... 8.00%

Derived From: Urea, Ferrous Sulfate.

## APPLICATION:

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	0.5–1 gal/ac 5–10 L/ha	Apply as needed.



\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro<sup>®</sup> Rep for more information.

*"I think Huma Gro<sup>®</sup>'s main advantage is the fast response of the products after application. Another benefit is that inventory, stock, and storage management is much easier; we don't even need big warehouses anymore. The third comparative advantage, which is very important in my view, is the return on investment. . . ."*

—Red Agricola, Nov 2015, Issue 27, pg 34-35



# BORO-PRO®

(FORMERLY BORO-MAX™)

Huma Gro® BORO-PRO® carbon-complexed with Micro Carbon Technology® ensures efficient and effective uptake of boron, which is required for cell division, plant metabolism, cell structure, sugar transport, pollination, and seed development. It enhances pollen viability and pollination in flowering crops and supplies boron nutrition necessary for proper growth and maturation.

- *Is required for cell division and normal tissue differentiation and maturation*
- *Functions with calcium to form an "intercellular cement" to maintain plant structural integrity*
- *Improves protein metabolism and reduces nitrate accumulation in leaves*
- *Improves sugar transport in plants*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1 cup–1 pt/ac 650 mL–1.25 L/ha	1 pt–1 qt/ac 1.25–2.5 L/ha	Apply as needed.

# COBALT

Huma Gro® COBALT carbon-complexed with Micro Carbon Technology® is an essential micronutrient involved with nodulation of legumes, microbial function, and recovery from plant stress. It is the center element of the B-12 vitamin.

- *May be applied with Huma Gro® VITOL® or a foliar nutrient to overcome stress caused by over-application of herbicides and pesticides*
- *Is an essential element for nodulation or nitrogen fixation in legumes*
- *Buffers excessive ethylene concentrations in plant tissue, preventing the production of abscisic acid and premature fruit drop*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1 cup–1 pt/ac 650 mL–1.25 L/ha	1 pt–1 qt/ac 1.25–2.5 L/ha	Apply as needed.

# COMOL™

Huma Gro® COMOL™ carbon-complexed with Micro Carbon Technology® ensures efficient nutrient uptake and translocation of phosphorus, cobalt, and molybdenum, which indirectly encourages production of amino acids, proteins, and carbohydrates that are necessary for cellular division, nodulation of legumes, microbial functions, recovery from plant stress, enzyme activities, and nitrogen metabolism.

- *May be applied with Huma Gro® VITOL® or a foliar nutrient to overcome stresses caused by severe weather or herbicide and pesticide residues*
- *Buffers ethylene concentrations in plant tissue*
- *Produces coenzymes necessary to convert nitrogen to amino acids for protein synthesis*
- *Stimulates natural production of enzymes that are required in ascorbic acid synthesis*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1 cup–1 pt/ac 650 mL–1.25 L/ha	1 pt–1 qt/ac 1.25–2.5 L/ha	Apply as needed.

**GUARANTEED ANALYSIS:**

Boron (B)..... 10.00%



**GUARANTEED ANALYSIS:**

Cobalt (Co) ..... 5.00%



**GUARANTEED ANALYSIS: 0-5-0**

Available Phosphate ( $P_2O_5$ )..... 5.00%  
Cobalt (Co) ..... 1.00%  
Molybdenum (Mo)..... 3.00%



# COPPER

Huma Gro® COPPER carbon-complexed with Micro Carbon Technology® ensures efficient and effective uptake of copper, which is a micronutrient involved in many plant metabolic processes including photosynthesis, enzyme activity, protein metabolism, nitrogen regulation, and plant vigor.

- *Increases enzyme activity for greater plant metabolism*
- *Has a role in the production of Vitamin A within the plant and functions in chlorophyll formation*
- *Has a regulatory effect when soil nitrogen is high*
- *May be used with sulfur to improve plant tolerance of environmental stresses*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1 cup–1 pt/ac 650 mL–1.25 L/ha	1 pt–1 qt/ac 1.25–2.5 L/ha	Apply as needed.

# MANGANESE

Huma Gro® MANGANESE carbon-complexed with Micro Carbon Technology® ensures efficient and effective uptake of manganese, which is a micronutrient involved in many plant metabolic activities including photosynthesis, enzyme activity, and nutrient regulation.

- *An enzyme activator–aids in chlorophyll synthesis*
- *Activates the lipid enzymes*
- *Essential for assimilation of carbon dioxide in photosynthesis*
- *Functions in the formation of riboflavin, ascorbic acid, and carotene*
- *Improves formation of lateral roots*
- *Closely associated with copper and zinc*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1 cup–1 pt/ac 650 mL–1.25 L/ha	1 pt–1 qt/ac 1.25–2.5 L/ha	Apply as needed.

# MOLYBDENUM

Huma Gro® MOLYBDENUM carbon-complexed with Micro Carbon Technology® ensures efficient and effective uptake of molybdenum, which is a micronutrient necessary in enzyme activities and particularly in nitrogen metabolism.

- *Essential for nitrogen fixation*
- *Is a coenzyme necessary to transform nitrogen to amino acids for protein synthesis*
- *Is essential for the functions of symbiotic nitrogen-fixing bacteria*

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1 cup–1 pt/ac 650 mL–1.25 L/ha	1 pt–1 qt/ac 1.25–2.5 L/ha	Apply as needed.

**GUARANTEED ANALYSIS:**

Sulfur (S) ..... 3.00%  
3.00% Combined Sulfur (S)  
Copper (Cu)..... 5.00%



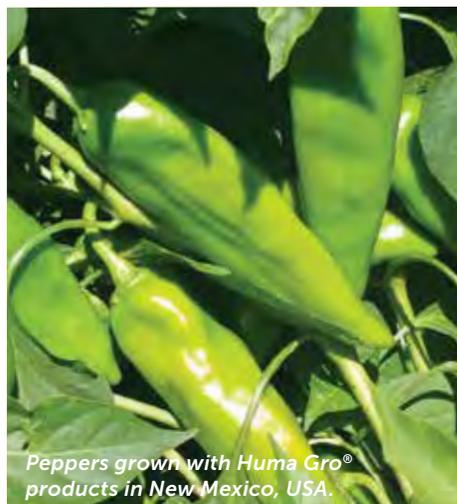
**GUARANTEED ANALYSIS:**

Sulfur (S) ..... 2.50%  
2.50% Combined Sulfur (S)  
Manganese (Mn) ..... 5.00%  
5.0% Water Soluble Manganese (Mn)



**GUARANTEED ANALYSIS:**

Molybdenum (Mo)..... 5.00%



# NICKEL

Huma Gro® NICKEL carbon-complexed with Micro Carbon Technology® is a critical source of nickel, which is necessary in the production of various tree, vine, and nut crops. Nickel is an irreplaceable constituent of the urease enzyme, essential in converting urea to ammonium (NH<sub>4</sub><sup>+</sup>). When Nickel is insufficient and urea is the major source of nitrogen, urea can accumulate in leaves to the point of plant toxicity—manifested as necrosis of leaf tips.

- **Protects plants against urea toxicity**
- **Involved in the synthesis of chemicals (phytoalexins) that plants produce to defend themselves against environmental stresses**
- **Contributes to lignin production, a component of cell walls that strengthens plants and supports against environmental stresses**

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1 cup–1 pt/ac 650 mL–1.25 L/ha	1 pt–1 qt/ac 1.25–2.5 L/ha	Apply as needed.

# PUR CAL®

Huma Gro® PUR CAL® carbon-complexed with Micro Carbon Technology® ensures maximum nitrogen-free calcium uptake and translocation within the plant. Calcium is a required nutrient for cellular strength and growth, plant vigor, and fruit development. PUR CAL® provides calcium without the nitrogen associated with other calcium products, allowing plants to benefit from calcium nutrition for fruiting without the nitrogen stimulus for vegetative growth.

- **Increases stalk strength**
- **Reduces lodging in grain crops**
- **Promotes maturity and viability in seed crops**
- **Reduces susceptibility to environmental stresses**
- **Enhances nodulation in legumes**
- **Promotes early root growth**

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	0.5–1 gal/ac 5–10 L/ha	Apply as needed.

# SULFUR

Huma Gro® SULFUR carbon-complexed with Micro Carbon Technology® enables sulfur nutrient absorption by the plant. Sulfur is a major nutrient involved in respiration, photosynthesis, amino acid metabolism, plant growth, and vigor.

- **Improves plant respiration**
- **Plays a key role in ferredoxin, a protein involved in electron transfer**
- **Involved in the formation of amino acids such as cysteine and methionine, which help form protein**
- **Plays an important role in carbohydrate and lipid metabolism**
- **Increases photosynthesis rates**

CROP	FOLIAR*	IRRIGATION*	FREQUENCY
All crops	1–2 qt/ac 2.5–5 L/ha	0.5–1 gal/ac 5–10 L/ha	Apply as needed.

**GUARANTEED ANALYSIS:**

Nickel (Ni) ..... 10.00%  
Sulfur (S) ..... 6.00%

Huma Gro® NICKEL can help correct deficiencies that lead to "mouse ears" in pecan tree leaves.



**GUARANTEED ANALYSIS:**

Calcium (Ca) ..... 8.00%  
Derived From: Calcium Acetate.



**GUARANTEED ANALYSIS: 8-0-0**

Total Nitrogen (N) ..... 8.00%  
8.00% Ammoniacal Nitrogen  
Sulfur (S) ..... 10.00%  
10.00% Combined Sulfur (S)



# Zero-Residue

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# CROP PROTECTION

Huma Gro® Zero-Residue Crop Protection products have had great success in treating disease-infested fields and soils. Our organic pesticides use natural materials (such as essential oils, proteins, minerals, etc.) to control nematodes, fungi, and insects.

Use our organic pesticides at any time during the crop cycle. These products are so safe, you can even use them on the day of harvest. Our organic pest control products are designed to work on specific pests and then decompose safely without posing a risk to humans. They are much better for the environment than traditional, highly toxic pesticides—but they still get the job done.

Huma Gro® Promax® and Huma Gro® Proud 3® are OMRI® (Organic Materials Review Institute) listed for use in organic production.



*“There was good emergence of the crop following the PROMAX®/ZAP® application. These products were easy to apply and I experienced tremendous results. I look forward to using the products again next season!”*

—Green chile grower in New Mexico, USA



# PROUD 3<sup>®</sup>

*Broad-Spectrum Foliar Insecticide, Miticide, and Fungicide*

Huma Gro<sup>®</sup> PROUD 3<sup>®</sup> is an organic-listed crop protection product. It is a safe and effective, foliar-applied insecticide, miticide, and fungicide. The mode of action is as a contact killer. As an insecticide, it works best on soft-bodied insects or on the juveniles.



## BENEFITS:

- *Directly affects soft-bodied insects and mites*
- *Provides excellent control against fungal/bacterial diseases in crops*
- *Activates resistance mechanisms in plants*
- *Offers proven control of some human pathogens found on crops*
- *Safe for crops, humans, and the environment*
- *Fungicidal effect against all types of fungal spores*
- *The product's natural chemistry has no documented cross-resistance*
- *Cost-effective*
- *Fast-acting upon contact*
- *Restricted Entry Interval (REI): 0 days*
- *Pre-Harvest Interval (PHI): 0 days*



## GUARANTEED ANALYSIS: 0-0-0

Thyme Oil.....5.5%  
 Inert Ingredients\* ..... 94.5%  
 Total Ingredients..... 100.0%  
 \*Contains water, molasses, and glycerin.

Contact a Huma Gro<sup>®</sup> Representative for a list of controlled diseases and pests.



CROP	MIX RATE WITH WATER*	FREQUENCY
All Crops	Up to 1 qt for every 25 gal/ac Up to 2.5 L for every 250 L/ha	Every 5–7 days as needed for the control of pests and diseases.

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro<sup>®</sup> Rep for more information.

*"A greenhouse grower in Costa Rica used Proud 3<sup>®</sup> to control mites, white flies, and aphids. One application and they were 100% gone. The grower wanted to purchase 400 liters right then and there!"*

—Adolfo Menesas





# PROMAX<sup>®</sup>

## Broad-Spectrum Soil Fungicide and Nematicide

Huma Gro<sup>®</sup> PROMAX<sup>®</sup> is an organic-listed, EPA-exempt crop protection product. It is a protective and curative pesticide recommended for control of plant parasitic nematodes and soil-borne diseases. The mode of action is as a contact killer. There is no restricted use, so it can be applied throughout the entire growing season.

### BENEFITS:

- *Inhibits nematode activity*
- *Provides excellent control of fungal diseases in soils*
- *Activates resistance mechanisms in plants*
- *Safe for crops, humans, and the environment*
- *Fungicidal effect against all types of fungal spores*
- *The product's natural chemistry has no documented cross-resistance*
- *Cost-effective performance*
- *Fast-acting upon contact*
- *Restricted Entry Interval (REI): 0 days*
- *Pre-Harvest Interval (PHI): 0 days*
- *For best results, 7–10 days after the final PROMAX<sup>®</sup> treatment is completed apply Huma Gro<sup>®</sup> ZAP<sup>®</sup> for stimulation of the soil biological community.*



### GUARANTEED ANALYSIS: 0-0-0

Thyme Oil.....3.5%  
 Inert Ingredients\* ..... 96.5%  
 Total Ingredients..... 100.0%

\*Contains water, molasses, glycerin.

Contact a Huma Gro<sup>®</sup> Representative for a list of controlled diseases and pests.

CROP	IRRIGATION*	FREQUENCY
All Crops	1–2 gal/ac 10–20 L/ha	Every 15–20 days as needed for the treatment of diseases and nematodes

\*Rates depend on frequency, method of application, and water volume, etc. Please consult a Huma Gro<sup>®</sup> Rep for more information.

*“I also use Promax<sup>®</sup> to treat wine, table, and raisin grapes. I’m specifically targeting the root knot and ring nematode. I apply 1 gal/acre at root flush. In addition to excellent nematode control, I regularly have the additional positive results of increased growth, more canes on the vine, a heavier canopy, and more bunches with increased size.”*

—Alan Nakashima



# Field Trial and Lab Results

## Huma Gro® Fumigation Replacement Program Increases Strawberry Yields 61%

Conducted by: Pacific Ag Research

This field trial conducted in Arroyo Grande, Calif., using Portola strawberries, assessed the effects on strawberry yields of replacing field fumigation with periodic applications of Huma Gro® **Promax**® and **Zap**®. Treatment #1, *Fumigation*, used PicClor 60 at 25 gal/ac applied once 3 weeks prior to planting. Treatment #2, *No Fumigation*, used **Promax**® at 2 gal/ac, soil-applied pre-plant and 5 additional times during the season. **Zap**® was applied at 1 gal/ac 1 week after each **Promax**® application. A Grower's Standard fertilizer program was used for both trials. This study demonstrated that **the use of Huma Gro® Promax® and Zap® can achieve high yields on Portola strawberries in California, even without traditional fumigation.** Figure 2 demonstrates

that in Trial 1, which used PicClor pre-plant field fumigation, weekly yields began dropping off at week 11/6, while in Trial #2 with periodic applications of **Promax**® and **Zap**®, the crop continued to produce at relatively high levels until the end of the season.

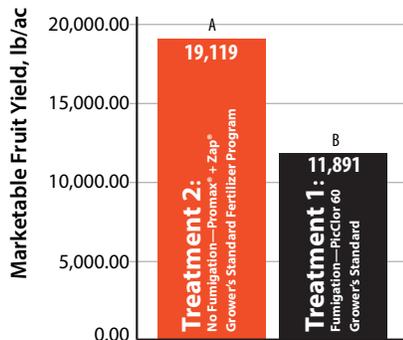


Figure 1. Total Marketable Strawberry Yield lb/ac, by Treatment

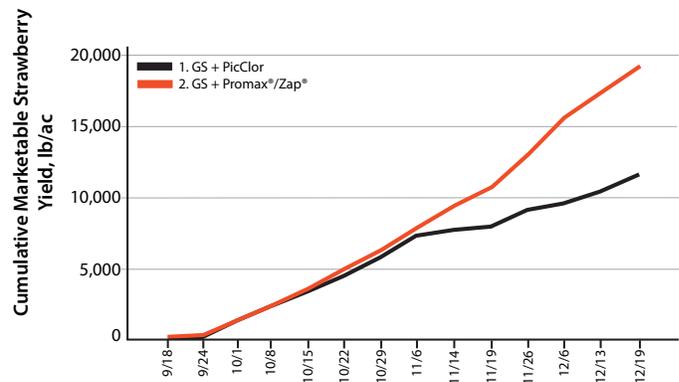


Figure 2. Cumulative Marketable Strawberry Yield lb/ac, by Date and Treatment

READ THE REPORT: <http://bit.ly/PromaxReplacement>

## In Vitro Bio-Assay Testing of PROMAX® Efficacy in Controlling Strawberry Pathogens

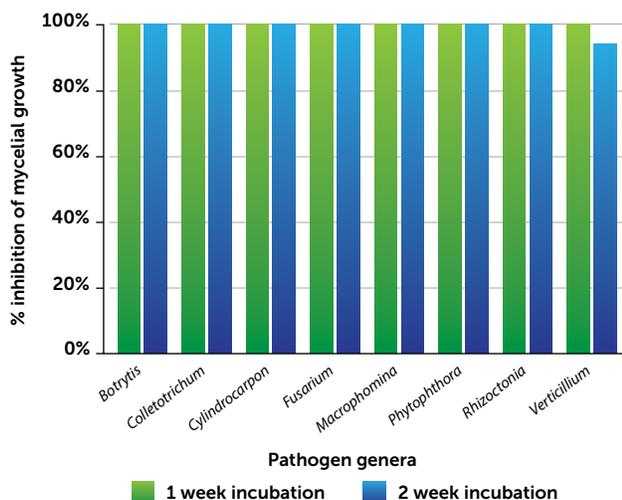
Conducted by: Plant Sciences, Inc.

The objective of this lab study was to test the efficacy of **Promax**® for inhibiting mycelial growth of 8 fungal strawberry pathogens through *in vitro* bio-assay.

The following 8 fungi and fungal-like pathogens were tested:

- *Botrytis cinerea*
- *Colletotrichum acutatum*
- *Cylindrocarpon destructans*
- *Fusarium oxysporum f. sp. fragariae*
- *Macrophomina phaseolina*
- *Phytophthora ramorum*
- *Rhizoctonia solani*
- *Verticillium dahliae*

After 1 week of incubation, all 8 pathogens tested were completely inhibited from mycelial growth in media amended with 2% **Promax**® (see photos). After 2 weeks, 7 of the 8 pathogens were still 100% inhibited.



The following photographs were taken after 1 week of incubation time at 20°C

### *Macrophomina phaseolina*

Negative control      2% **Promax**®



### *Fusarium oxysporum f. sp. fragariae*

Negative control      2% **Promax**®



READ THE REPORT: <http://bit.ly/PromaxBioAssay>



# Carbon-Rich

## **ORGANIC ACIDS**

Exclusive processes allow Huma Gro® to offer high-performing fertility products based on organic acid compounds rich in carbon. These natural organic acids are similar to the chemical makeup of the plants themselves, so it's easier for the roots or leaves to assimilate nutrients and put them to work more effectively. Our organic acids also work in buffering roots against the damaging effects of highly acidic or alkaline soils. With Huma Gro® carbon-rich organic acid products, your crops can maximize the potential of your fertilizer, resulting in better germination, more efficient foliar applications, and strong, vigorous growth.

***"We needed help to reduce electrical conductivity and to make nutrients available to plants. HUMA GRO® was the solution to all our problems. By using the HUMA GRO® liquid fertilizer line, we're not only nurturing our plants but also improving the biological, physical, and chemical conditions of our soils."***

*—Claudio Falcone*



# X-TEND®/X-TEND® B

The Solution for Improving Fertilizer Efficiency

## X-TEND®

Huma Gro® X-TEND® is an excellent source of Micro Carbon Technology® formulated with organic acids and nutrients to improve the efficiency and uptake of fertilizers. X-TEND® is excellent to release nutrients tied up in soils and is an outstanding additive for complexing most foliar nutrients.

## X-TEND® B

Huma Gro® X-TEND® B is a concentrated Micro Carbon Technology® product with high levels of organic acids and nutrients. X-TEND® B is formulated to be blended in liquid fertilizers or to be impregnated onto dry fertilizers, extending the effectiveness of the fertilizer or fertilizer solutions. X-TEND® B has a blue dye so that application can be verified.



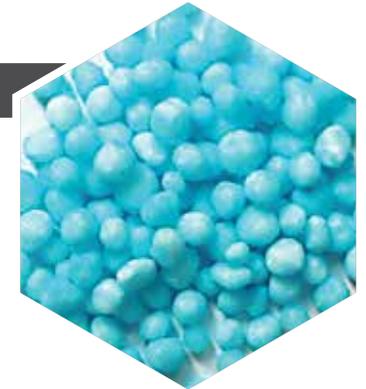
### BENEFITS:

- Complexes nutrients for easier plant uptake
- Encourages root growth
- Buffers salts in high alkaline or sodium soils

### GUARANTEED ANALYSIS: 6-2-0

Total Nitrogen (N) .....6.0%  
 6.0% Urea Nitrogen  
 Available Phosphate (P<sub>2</sub>O<sub>5</sub>).....2.0%

Derived From: Urea, Phosphoric Acid.



### APPLICATION METHOD

### SUGGESTED RATE\*

General application in soil	Up to 1 qt/ac, 2.5 L/ha
Liquid fertilizer solutions (soil-applied)	1 qt/40 gal of liquid, 1 L/160 L of liquid
Dry, non-coated, granular fertilizers	2 qt/ton of granular, 2 L/metric ton of granular



*"Agricola Don Luis closed its season with 95% of its grapes collected in the first field run 'for export,' with 85% sold as premium quality, according to César Augusto Uculmana, Table Grape Manager, and Helio Gonzales. They credit their success to HUMA GRO® liquid fertilizers, with Micro Carbon Technology®."*

—Red Agricola, Apr 2015, Issue 21, pg 28-29



# FULVI PRO® 10%

Huma Gro® FULVI PRO® 10% carbon-complexed with Micro Carbon Technology® is an activated liquid fulvic-acid source derived from highly oxidized leonardite material. FULVI PRO® 10% provides a liquid carbon-rich foliar additive as well as a food substrate for the beneficial microbes in the soil.

- *Complexing of chemicals and fertilizers enabling a quicker uptake by plants*
- *A carbon food source for the beneficial microbial population of the soil food web*

APPLICATION METHOD	SUGGESTED RATE*
Foliar	1–2 qt/ac, 2.5–5 L/ha
Soil	0.5–1 gal/ac, 5–10 L/ha

# FULVI PRO® 20%

Huma Gro® FULVI PRO® 20% is an activated liquid fulvic acid source derived from highly oxidized leonardite material. FULVI PRO® 20% provides a liquid carbon-rich foliar additive as well as a food substrate for the beneficial biology in the soil.

- *Complexing of chemicals and fertilizers enabling a quicker uptake by plants*
- *A carbon food source for the beneficial microbial population of the soil food web*

APPLICATION METHOD	SUGGESTED RATE*
Foliar	1–2 qt/ac, 2.5–5 L/ha
Soil	0.5–1 gal/ac, 5–10 L/ha

# HUMA PRO® 16

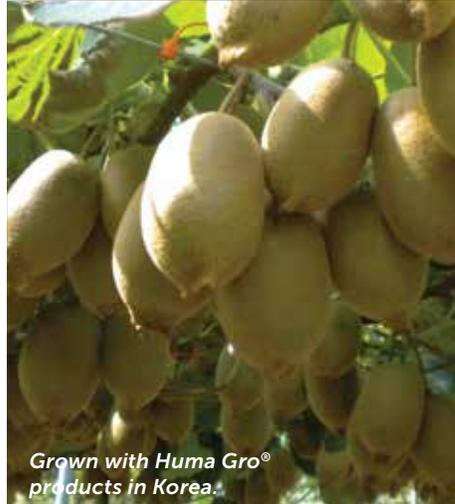
Huma Gro® HUMA PRO® 16 complexed with Micro Carbon Technology® is an activated liquid humic-acid source derived from a highly oxidized, naturally occurring carbon and mineral deposit. HUMA PRO® 16 treats unbalanced soil conditions caused by a lack of humic acid, promoting a stronger, healthier soil for sustainable plant growth.

- *Long-term soil organic matter building*
- *Long-term soil microbial activation*

APPLICATION METHOD	SUGGESTED RATE*
Soil banded, sprinklers	1–2 gal/ac, 10–20 L/ha
Soil broadcast	Up 10 gal/ac, 40 L/ha

**Total Fulvic Acid (FA) .....10.00%\***

\*The standard for ascertaining Fulvic Acid percentage has not been established.



**Total Fulvic Acid (FA) ..... 20.00%\***

\*The standard for ascertaining Fulvic Acid percentage has not been established.



**Total Humic Acid (HA) .....16.00%\***

\*Analysis using the Colorimetric method. (10.00% using the CDFA method or the HPTA/ISO 19822 methods.)

*“HUMA GRO® products are easier to handle and take up less storage space, and their cost is lower.”*

*—Carlos Coloma*





**A COMPLETE LINE of dry, concentrated humic and fulvic acid products made from NATURALLY OCCURRING oxidized lignite containing many supplemental natural minerals in trace amounts and milled to specific granular size categories.**

**Huma Burst® humic and fulvic acids:**

- **Improve root mass and growth**
- **Improve efficiency of fertilizers**
- **Release nutrients tied-up in soil**
- **Improve soil fertility**
- **Buffer roots against damaging effects of extreme soil pH**
- **Improve soil structure and feed microbial populations in the root zone**

## MICROHUMIC®

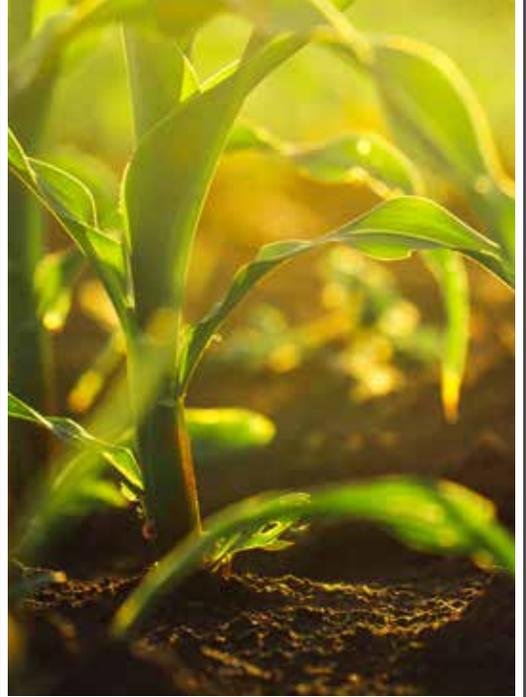
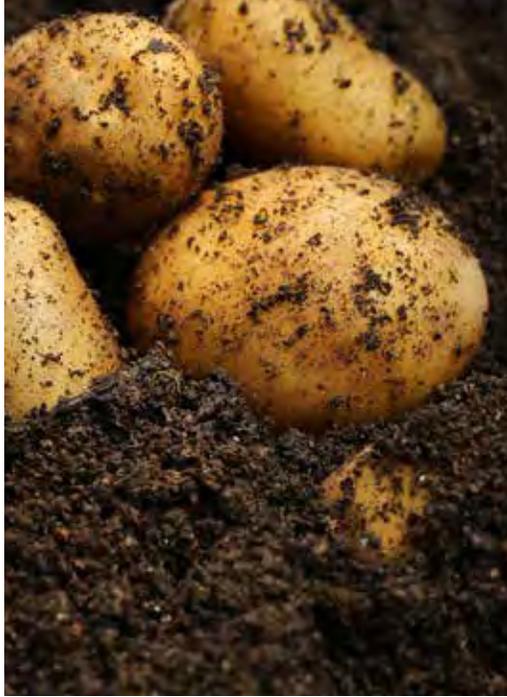
Huma Gro® HUMA BURST® MICROHUMIC® is a soil amendment and seed treatment. It is a dry humic and fulvic acid ultra-fine product that is micronized to an average particle size of 15 microns (our smallest 60%–70% humic/fulvic particle size). When mixed with seed, compost, or other granular fertilizers (except urea) it delivers the maximum concentration of humic/fulvic acids. MICROHUMIC® can be prepared for soil granular fertilizer, compost, and seed treatment. Due to its very fine particle size, the product is also excellent for specialty use in creating humate pills, mycorrhizal bulking agents, and hydroseeder slurries. Not recommended for dry broadcast soil application or air planters.

- **Even coverage/distribution of humic/fulvic acid for sustainable carbon benefit**
- **Soil organic-matter building around the seed, compost, or granular fertilizer**
- **Improves seed germination**
- **Improves seedling root development**
- **Promotes conversion of fertilizer and compost into plant-available food**
- **Increases nutrient mineralization**
- **Sustainable soil microbial activation**

## PULVERIZED

Huma Gro® HUMA BURST® PULVERIZED is pulverized to a powder (85% of particles are less than 50 mesh) and can be used for extraction for liquid humic or fulvic acid by chemical reaction. HUMA BURST® PULVERIZED is a 60%–70% humic/fulvic acid that can also be applied to all soils—broadcast in fall, post-harvest, or early spring—either pre-plant or with seed. Incorporation is not required. It can be applied in bands, either with seed, fertilizer, or after planting.

- **Powder size promotes even coverage/distribution of humic/fulvic acid for sustainable carbon benefit**
- **Long-term soil organic-matter building**
- **Increases water penetration**
- **Increases flocculation of clays**
- **Promotes conversion of fertilizer into plant-available food**
- **Increases soil nutrient mineralization**
- **Sustainable soil microbial activation**



**METHOD OF APPLICATION:**

**SUGGESTED RATE:**

Mix with seeds at planting	8–16 oz/ac, 585 mL/ha—1.25 kg/ha
Soil: Mix with granular fertilizers and apply in a band at planting.	Up to 2 lb/ac, 2.25 kg/ha
Soil: Mix with compost and apply broadcast/band at, or prior to, planting	Up to 4 lb/ac, 4.5 kg/ha



**METHOD OF APPLICATION:**

**SUGGESTED RATE:**

Soil banded or side dressed	Up to 75 lb/ac, 75 kg/ha
Soil broadcast incorporated	Up to 150 lb/ac, 150 kg/ha



# GREENS

Huma Gro® HUMA BURST® GREENS is ground and screened to a particle size of 1–2 mm (contains less than 3% dust). Huma Burst® Greens is a 60%–70% humic/fulvic acid that can be applied to all soil types—broadcast in fall, post-harvest, or early spring—either pre-plant or with seed. Incorporation is not required. It can be applied in bands, either with seed, fertilizer, or after planting.

- *Uniform granular size promotes even coverage/distribution of humic/fulvic acid for sustainable carbon benefit*
- *Long-term soil organic-matter building*
- *Increases water penetration*
- *Increases flocculation of clays*
- *Promotes conversion of fertilizer into plant-available food*
- *Increases soil nutrient mineralization*
- *Sustainable soil microbial activation*

## 1–3mm

Huma Gro® HUMA BURST® 1–3 mm is ground and screened to a uniform crumble (contains less than 3% dust) ideal for mixing with other dry inputs that are not hygroscopic. HUMA BURST® 1–3 mm is a 60%–70% humic/fulvic acid that can be applied to all soils—broadcast in fall, post-harvest, or early spring—either pre-plant or with seed. Incorporation is not required. It can be applied in bands, either with seed, fertilizer, or after planting.

- *Uniform granular size promotes even coverage/distribution of humic/fulvic acid for sustainable carbon benefit*
- *Long-term soil organic-matter building*
- *Increases water penetration*
- *Increases flocculation of clays*
- *Promotes conversion of fertilizer into plant-available food*
- *Increases soil nutrient mineralization*
- *Sustainable soil microbial activation*

## 2–6mm

Huma Gro® HUMA BURST® 2–6 mm is ground and screened to a uniform crumble (contains less than 3% dust) ideal for mixing with other dry inputs that are not hygroscopic. HUMA BURST® 2–6 mm is a 60%–70% humic/fulvic acid that can be applied to all soils—broadcast in fall, post-harvest, or early spring—either pre-plant or with seed. Incorporation is not required. It can be applied in bands, either with seed, fertilizer, or after planting.

- *Uniform granular size promotes even coverage/distribution of humic/fulvic acid for sustainable carbon benefit*
- *Long-term soil organic-matter building*
- *Increased water penetration*
- *Increased flocculation of clays*
- *Promotes conversion of fertilizer into plant-available food*
- *Increases soil nutrient mineralization*
- *Sustainable soil microbial activation*

**METHOD OF APPLICATION:****SUGGESTED RATE:**

Soil banded or side dressed

Up to 75 lb/ac, 75 kg/ha

Soil broadcast incorporated

Up to 150 lb/ac, 150 kg/ha

**METHOD OF APPLICATION:****SUGGESTED RATE:**

Soil banded or side dressed

Up to 75 lb/ac, 75 kg/ha

Soil broadcast incorporated

Up to 150 lb/ac, 150 kg/ha

**METHOD OF APPLICATION:****SUGGESTED RATE:**

Soil banded or side dressed

Up to 75 lb/ac, 75 kg/ha

Soil broadcast incorporated

Up to 150 lb/ac, 150 kg/ha



# 6mm(-)

Huma Gro® HUMA BURST® 6mm(-) is ground and screened to a particle size of 6 mm (¼ inches) or smaller (contains less than 40% dust) and is ideal for spreading on and incorporating into soil. Huma Burst® 6mm(-) is a 60%–70% humic/fulvic acid that can be applied to all soil types—broadcast in fall, post-harvest, or early spring—either pre-plant or with seed. Incorporation is not required. It can be applied in bands, either with seed, fertilizer, or after planting.

- *Variable granular size promotes even coverage/distribution of humic/fulvic acid for sustainable carbon benefit*
- *Long-term soil organic-matter building*
- *Increases water penetration*
- *Increases flocculation of clays*
- *Promotes conversion of fertilizer into plant-available food*
- *Increases soil nutrient mineralization*
- *Sustainable soil microbial activation*

# K HUME®

Huma Gro® HUMA BURST® K HUME® is an 60%–70% humic and fulvic acid combined with potassium hydroxide to make an excellent soil conditioner. Improved solubility (76% soluble) speeds activity in the soil for enhanced microbial uptake and growth. The product is coated and screened to various particle sizes (the standard size is 1–3 mm, custom sizes are available). HUMA BURST® K HUME® also contains many supplemental natural minerals in trace amounts.

- *Uniform granular size promotes even coverage/distribution of humic/fulvic acid for short-term carbon benefit*
- *With the potassium coating, becomes a short-term soil organic-matter builder*
- *Increases water penetration*
- *Increases flocculation of clays*
- *Promotes conversion of fertilizer into plant-available food*
- *Increases soil nutrient mineralization*
- *Short-term soil microbial activation*

# PRILLED

Huma Gro® HUMA BURST® PRILLED is a pure, dry humate created through a patented dispersing granule process that results in a spherical granule containing thousands of micro-sized humate particles. Within a few minutes after watering, these micro-sized particles dissolve into the soil, immediately going to work to improve nutrient efficiency and soil conditions.

- *Ultra-dry granules are engineered to be compatible with all fertilizers, including urea*
- *Uniform, spherical granules allow for ease of handling and even application*
- *Hard granules are resistant to breakage during handling, have low moisture content, and are cleaner and easier to handle*
- *Long-term soil organic-matter building*
- *Increased water penetration and flocculation of clays*
- *Promotes conversion of fertilizer into plant-available food*
- *Increases soil nutrient mineralization*
- *Sustainable soil microbial activation*

**METHOD OF APPLICATION:****SUGGESTED RATE:**

Soil banded or side dressed

Up to 75 lb/ac, 75 kg/ha

Soil broadcast incorporated

Up to 150 lb/ac, 150 kg/ha

**METHOD OF APPLICATION:****SUGGESTED RATE:**

Soil banded or side dressed

Up to 75 lb/ac, 75 kg/ha

Soil broadcast incorporated

Up to 150 lb/ac, 150 kg/ha

**METHOD OF APPLICATION:****SUGGESTED RATE:**

Soil banded or side dressed

Up to 75 lb/ac, 75 kg/ha

Soil broadcast incorporated

Up to 150 lb/ac, 150 kg/ha



# MICROMATE

Huma Gro® HUMA BURST® MICROMATE is the result of a revolutionary new micronizing technology and is designed for suspension in a liquid to deliver the maximum possible concentration of humic and fulvic acids, plus a clay/mineral suspension agent. Huma Burst® MicroMate uses the advantage of its tremendous surface area to more readily improve plants and soil. When in liquid suspension form, its total humic/fulvic acid analysis of 24% exceeds any known liquid product on the market. HUMA BURST® MICROMATE is non-toxic and safe to handle. The product's natural pH of 3.7 enables it to be safely used in all types of agriculture and horticulture settings.

- *Short-term soil organic-matter building*
- *Promotes conversion of fertilizer into plant-available food*
- *Increases water penetration*
- *Increases nutrient mineralization*
- *Increases soil flocculation*
- *Sustainable soil microbial activation*

# STABLESOL™

Huma Gro® HUMA BURST® STABLESOL™ is a water-soluble powder produced using a proprietary extraction, modification, and spray dry process. This process yields a high humic/fulvic acid product that, when added to water, has a low solution viscosity. HUMA BURST® STABLESOL™ can be blended and pumped easily and will not gel during storage or plug nozzles. HUMA BURST® STABLESOL™ has excellent stability under both high and low soil pH conditions. It is highly effective for complexing metal ions and for preparing micronutrient solutions at various pH ranges (0.5–14.0). As both an alkaline and acid soluble potassium humate, this product is truly unique. HUMA BURST® STABLESOL™ completely dissolves and will not precipitate when added to other solutions.

- *Uniform 100% soluble powder promotes even coverage/distribution of humic/fulvic acid for sustainable carbon benefit*
- *Promotes conversion of fertilizer into plant-available food*
- *Short-term soil organic-matter building*
- *Increases nutrient mineralization*
- *Increases water penetration and soil flocculation*
- *Sustainable soil microbial activation*

# SOLUBLE POWDER

Huma Gro® HUMA BURST® SOLUBLE POWDER is a water-soluble powder produced using a proprietary extraction, modification, and spray dry process. This process yields a high humic/fulvic acid product that, when added to water, has a low solution viscosity. HUMA BURST® SOLUBLE POWDER can be blended and pumped easily and will not gel during storage or plug nozzles. HUMA BURST® SOLUBLE POWDER completely dissolves and will not precipitate when added to other solutions or mixed with liquid fertilizers having a pH of 7.0 or higher.

- *Uniform 100% soluble powder promotes even coverage/distribution of humic/fulvic acid for sustainable carbon benefit*
- *Promotes conversion of fertilizer into plant-available food*
- *Short-term soil organic-matter building*
- *Increases nutrient mineralization*
- *Increases water penetration and soil flocculation*
- *Sustainable soil microbial activation*

## GUIDELINES FOR CREATING SUSPENSION, GALLON OR LITER

Target Min. Percent. Humic + Fulvic Acids	MicroMate lb (kg)	Water gal (l)	Water oz (mL)	Total Weight lb/gal (kg/l)
24.0%	3.76 (0.45)	0.67 (0.67)	85.8 (670)	9.35 (1.12)
20.0%	3.05 (0.37)	0.73 (0.73)	93.4 (730)	9.09 (1.10)
16.0%	2.37 (0.28)	0.78 (0.78)	99.8 (780)	8.85 (1.06)
12.0%	1.73 (0.21)	0.83 (0.83)	106.2 (830)	8.62 (1.04)
8.0%	1.12 (0.13)	0.88 (0.88)	112.6 (880)	8.40 (1.01)



### METHOD OF APPLICATION:

### SUGGESTED RATE:

Vegetable crops, strawberries	Up to 2 lb/ac (2.25 kg/ha), diluted with 25 gal (100 liters) of water
Row crops	Up to 3 lb/ac (3.36 kg/ha), diluted with 25 gal (100 liters) of water
Citrus, olives, deciduous fruit & nut trees	Up to 4 lb/ac (4.5 kg/ha), diluted with 25 gal (100 liters) of water



### METHOD OF APPLICATION:

### SUGGESTED RATE:

Vegetable crops, strawberries	Up to 2 lb/ac (2.25 kg/ha), diluted with 25 gal (100 liters) of water
Row crops	Up to 3 lb/ac (3.36 kg/ha), diluted with 25 gal (100 liters) of water
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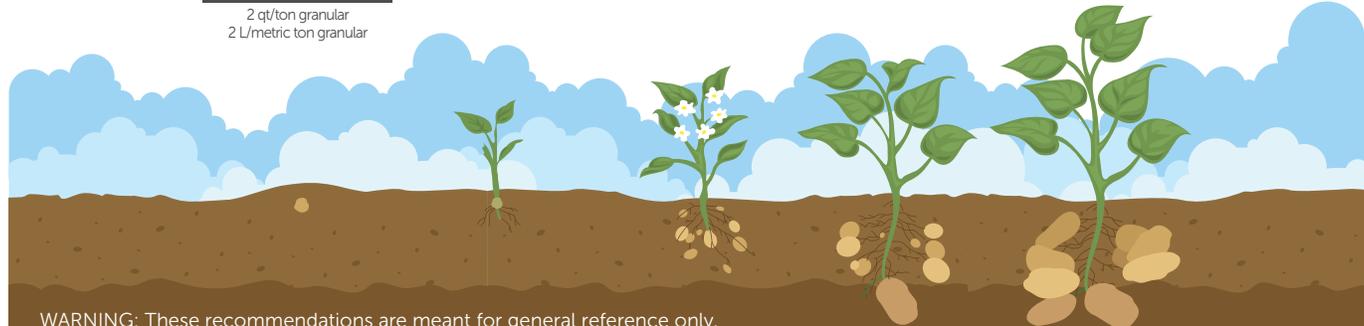


# Crop Programs

HUMAGRO  
 GENERIC CROP PROGRAM  
**POTATO**



SOIL APPLICATION		FOLIAR APPLICATION				SOIL APPLICATION
PRE-PLANT	PLANTING	VEGETATIVE GROWTH <small>Can be repeated every 10 days during this stage</small>	TUBER INITIATION <small>Can be repeated every 10 days during this stage</small>	TUBER BULKING <small>Can be repeated every 10 days during this stage</small>	TUBER MATURITY	POST-HARVEST
FERTIL SOIL® 1-2 qt/ac, 2.5-5 L/ha	FERTIL SOIL® 1-2 qt/ac, 2.5-5 L/ha	VITOL® 1-2 qt/ac, 2.5-5 L/ha	BREAKOUT® 1-2 qt/ac, 2.5-5 L/ha	VITOL® 1-2 qt/ac, 2.5-5 L/ha	JACKPOT® 1-2 qt/ac, 2.5-5 L/ha	FERTIL HUMUS® 1-2 qt/ac, 2.5-5 L/ha
ZAP® 0.5-1 gal/ac, 5-10 L/ha	BREAKOUT® 1-2 qt/ac, 2.5-5 L/ha	SUPER NITRO® 0.5-1 qt/ac, 1.25-2.5 L/ha	SUPER POTASSIUM® 0.5-1 qt/ac, 1.25-2.5 L/ha	SUPER POTASSIUM® 0.5-1 qt/ac, 1.25-2.5 L/ha	CALCIUM 0.5-1 qt/ac, 1.25-2.5 L/ha	
	SUPER PHOS® 1-2 qt/ac, 2.5-5 L/ha	MAX PAK® 0.5-1 qt/ac, 1.25-2.5 L/ha	CALCIUM 0.5-1 qt/ac, 1.25-2.5 L/ha	CALCIUM 0.5-1 qt/ac, 1.25-2.5 L/ha		
	X-TEND® B 2 qt/ton granular 2 L/metric ton granular					

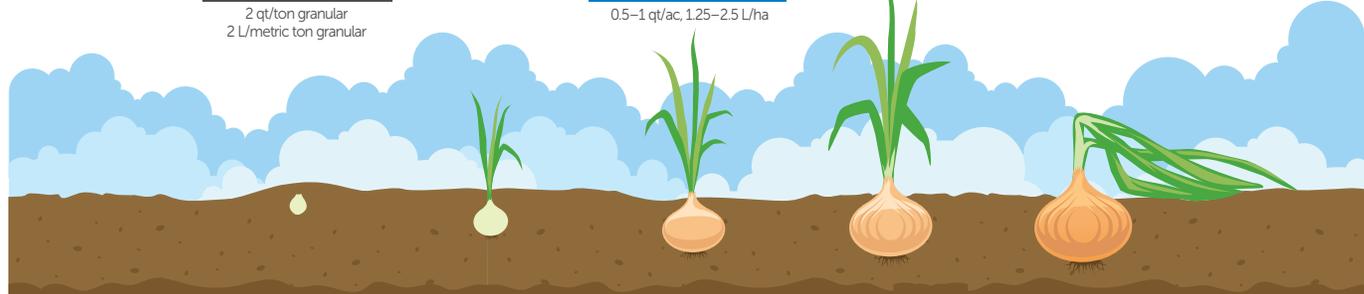


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HUMAGRO  
 GENERIC CROP PROGRAM  
**ONION**



SOIL APPLICATION		FOLIAR APPLICATION				SOIL APPLICATION
PRE-PLANT	PLANTING	LEAF GROWTH <small>Can be repeated every 10 days during this stage</small>	BULB INITIATION <small>Can be repeated every 10 days during this stage</small>	BULB GROWTH <small>Can be repeated every 10 days during this stage</small>	BULB MATURITY	POST-HARVEST
FERTIL SOIL® 1-2 qt/ac, 2.5-5 L/ha	FERTIL SOIL® 1-2 qt/ac, 2.5-5 L/ha	VITOL® 1-2 qt/ac, 2.5-5 L/ha	BREAKOUT® 1-2 qt/ac, 2.5-5 L/ha	GOLDEN PRO® 1-2 qt/ac, 2.5-5 L/ha	JACKPOT® 1-2 qt/ac, 2.5-5 L/ha	FERTIL HUMUS® 1-2 qt/ac, 2.5-5 L/ha
ZAP® 0.5-1 gal/ac, 5-10 L/ha	BREAKOUT® 1-2 qt/ac, 2.5-5 L/ha	SUPER NITRO® 0.5-1 qt/ac, 1.25-2.5 L/ha	SUPER POTASSIUM® 0.5-1 qt/ac, 1.25-2.5 L/ha	SUPER POTASSIUM® 0.5-1 qt/ac, 1.25-2.5 L/ha	CALCIUM 0.5-1 qt/ac, 1.25-2.5 L/ha	
	SUPER PHOS® 1-2 qt/ac, 2.5-5 L/ha	MAX PAK® 0.5-1 qt/ac, 1.25-2.5 L/ha	CALCIUM 0.5-1 qt/ac, 1.25-2.5 L/ha	CALCIUM 0.5-1 qt/ac, 1.25-2.5 L/ha		
	X-TEND® B 2 qt/ton granular 2 L/metric ton granular		SUPER PHOS® 0.5-1 qt/ac, 1.25-2.5 L/ha			



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# GENERIC CROP PROGRAM PEPPERS



SOIL APPLICATION	FOLIAR APPLICATION				
TRANSPLANT	ESTABLISHMENT <i>Can be repeated every 10 days during this stage</i>	VEGETATIVE GROWTH <i>Can be repeated every 10 days during this stage</i>	FLOWERING <i>Can be repeated every 10 days during this stage</i>	FRUIT BULKING <i>Can be repeated every 20 days during this stage</i>	FRUIT BULKING/ FLOWERING <i>Can be repeated every 20 days during this stage</i>
<b>FERTIL SOIL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>VITOL®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>BREAKOUT®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>VITOL®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>BREAKOUT®</b> 0.5-1 qt/ac, 125-2.5 L/ha
<b>BREAKOUT®</b> 1-2 qt/ac, 2.5-5 L/ha		<b>SUPER NITRO®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>SUPER PHOS®</b> 0.5-1 pt/ac, 0.75-1.25 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 125-2.5 L/ha
<b>SUPER PHOS®</b> 1-2 qt/ac, 2.5-5 L/ha		<b>MAX PAK®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>Z-MAX®</b> 0.5-1 pt/ac, 0.75-1.25 L/ha	<b>SUPER POTASSIUM®</b> 0.5-1 pt/ac, 0.75-1.25 L/ha	<b>SUPER POTASSIUM®</b> 0.5-1 pt/ac, 0.75-1.25 L/ha
<b>X-TEND® B</b> 2 qt/ton granular 2 L/metric ton granular					



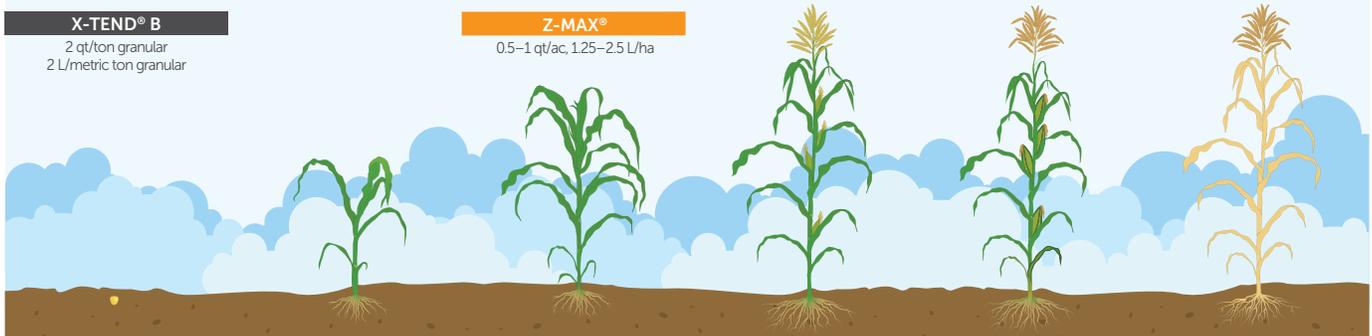
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# GENERIC CROP PROGRAM CORN



SOIL APPLICATION	FOLIAR APPLICATION				SOIL APPLICATION
PLANTING	V4 4-LEAF	V12 12-LEAF	R1 SILKING	R5 MATURITY	POST-HARVEST
<b>FERTIL SOIL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1-2 qt/ac, 2.5-5 L/ha			<b>FERTIL HUMUS®</b> 1-2 qt/ac, 2.5-5 L/ha
<b>SUPER PHOS®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>LUCKY 7®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>LUCKY 7®</b> 1-2 qt/ac, 2.5-5 L/ha			
<b>X-TEND® B</b> 2 qt/ton granular 2 L/metric ton granular		<b>Z-MAX®</b> 0.5-1 qt/ac, 125-2.5 L/ha			



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# Crop Programs

HUMA GRO® GENERIC CROP PROGRAM

## STRAWBERRIES



SOIL APPLICATION		FOLIAR APPLICATION			SOIL APPLICATION
TRANSPLANT	POST-TRANSPLANT <small>Can be repeated every 10 days during this stage</small>	FLOWERING <small>Can be repeated every 10 days during this stage</small>	BERRY SIZING <small>Can be repeated every 10 days during this stage</small>	PRE-HARVEST <small>Can be repeated every 10 days during this stage</small>	POST-HARVEST
<b>FERTIL SOIL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1 pt/ac, 125 L/ha	<b>BREAKOUT®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>VITOL®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>VITOL®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>FERTIL HUMUS®</b> 1-2 qt/ac, 2.5-5 L/ha
<b>BREAKOUT®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>SUPER PHOS®</b> 1 pt/ac, 125 L/ha	<b>MAX PAK®</b> 0.5-1 pt/ac, 0.75-1.25 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 125-2.5 L/ha	
<b>SUPER PHOS®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>SUPER NITRO®</b> 1 pt/ac, 125 L/ha	<b>SUPER PHOS®</b> 0.5-1 pt/ac, 0.75-1.25 L/ha	<b>SUPER POTASSIUM®</b> 0.5-1 pt/ac, 0.75-1.25 L/ha	<b>SUPER POTASSIUM®</b> 0.5-1 pt/ac, 0.75-1.25 L/ha	
<b>X-TEND® B</b> 2 qt/ton granular 2 L/metric ton granular					



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HUMA GRO® GENERIC CROP PROGRAM

## ALMONDS



SOIL APPLICATION		FOLIAR APPLICATION			
ROOT FLUSH	BLOOM	POLLINATION	NUT BULKING <small>Can be repeated every 10 days during this stage</small>	CRACKING OPEN	PRE-HARVEST
<b>FERTIL HUMUS®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>BREAKOUT®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>BREAKOUT®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>JACKPOT®</b> 1-2 qt/ac, 2.5-5 L/ha
<b>SUPER PHOS®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>MAX PAK®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>Z-MAX®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 125-2.5 L/ha
<b>X-TEND® B</b> 2 qt/ton granular 2 L/metric ton granular				<b>SUPER POTASSIUM®</b> 0.5-1 qt/ac, 125-2.5 L/ha	<b>SUPER POTASSIUM®</b> 0.5-1 qt/ac, 125-2.5 L/ha



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GENERIC CROP PROGRAM

# APPLES



SOIL APPLICATION

FOLIAR APPLICATION

ROOT FLUSH	BUD SWELL		FLOWERING	FRUIT DEVELOPMENT <small>Can be repeated every 10 days during this stage</small>	MATURITY
<b>FERTIL HUMUS®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>BREAKOUT®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>BREAKOUT®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>JACKPOT®</b> 1-2 qt/ac, 2.5-5 L/ha	
<b>SUPER PHOS®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>MAX PAK®</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	<b>Z-MAX®</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	<b>CALCIUM</b> 1-2 qt/ac, 2.5-5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	
<b>X-TEND® B</b> 2 qt/ton granular 2 L/metric ton granular				<b>SUPER POTASSIUM®</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	



WARNING: These recommendations are meant for general reference only.

Contact your Huma Gro® representative for a custom program designed for your crop's specific needs: (001) 480.961.1220 or HumaGro.com



GENERIC CROP PROGRAM

# ORANGES



SOIL APPLICATION

FOLIAR APPLICATION

INITIAL PHASE	GROWTH	FLOWERING	FRUIT SET	FRUIT IS WALNUT SIZED	FRUIT DOUBLE IN SIZE <small>Can be repeated every 15 days during this stage</small>	30 DAYS PRE-HARVEST
<b>FERTIL HUMUS®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>BREAKOUT®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>BREAKOUT®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>VITOL®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>JACKPOT®</b> 1-2 qt/ac, 2.5-5 L/ha
<b>SUPER PHOS®</b> 1-2 qt/ac, 2.5-5 L/ha	<b>MAX PAK®</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	<b>Z-MAX®</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	<b>CALCIUM</b> 0.5-1 qt/ac, 1.25-2.5 L/ha
<b>X-TEND® B</b> 2 qt/ton granular 2 L/metric ton granular					<b>SUPER POTASSIUM®</b> 0.5-1 qt/ac, 1.25-2.5 L/ha	<b>SUPER POTASSIUM®</b> 0.5-1 qt/ac, 1.25-2.5 L/ha



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# Stories From the Field

**Location:** Italy

**Crop:** Peas

**HG Products:** 2 applications Breakout®, 1 application Vitol®

**Results:** Grower experienced far greater flowering and fruit set. Peas were more abundant and uniform. The plants were more lush and filled in, had far more height, and better coloring than the control group.



CONTROL



**Location:** Georgia, USA

**Crop:** Blueberries

**HG Products:** 1 application Breakout® at flowering

**Results:** The grower experienced an unprecedented level of fruit set and growth on first-year plants. He achieved a sizable yield in a year when he thought he would have none!



HUMA GRO®



HUMA GRO®

**Location:** China

**Crop:** Cherries

**HG Products:** Soil-applied Super Phos®, Super Potassium®, Vitol®. Foliar-applied Calcium, Vitol®, Breakout®.

**Results:** Grower experienced significant increase in yield and fruit quality. The biggest difference from previous harvests was the improved taste and sweetness.



HUMA GRO®



Contact your local Huma Gro® rep to get more info about these farmers' experiences or to discuss how our products can produce similar results with your crop.



**CONTROL**



**HUMA GRO®**



**HUMA GRO®**

**Location:** New Mexico, USA

**Crop:** Chiles

**HG Products:** Promax®, Zap®

**Results:** Grower experienced nematode reduction and a 1.76 ton/acre increase in yield, or 15%. This allowed the grower to gain between \$750–\$1,000 per acre in profit.



**HUMA GRO®**



**HUMA GRO®**



**HUMA GRO®**



**HUMA GRO®**

# Stories From the Field

**Location:** China

**Crop:** Tomatoes

**HG Products:** Breakout®, Super Potassium®, Vitol®, Calcium

**Results:** Grower experienced increased quality, shine, and uniformity. A box of 100 treated tomatoes weighed 15 kilos more than untreated. Tomato yield more than doubled, and quality increased. The grower was able to make substantially more profit by switching to Huma Gro® products alone.



HUMA GRO®



HUMA GRO®

**Location:** Peru

**Crop:** Corn

**HG Products:** Full nutrient program

**Results:** The grower experienced deeper color and significant increase in growth, plant strength, quality, and root mass development.



CONTROL

HUMA GRO®

**Location:** Spain

**Crop:** Limes

**HG Products:** Breakout®

**Results:** After applying Breakout® throughout his lime orchard, the grower experienced significant new shoot growth on his trees, more blossoms, and increased fruit set. Yield increased significantly.



HUMA GRO®



Contact your local Huma Gro® rep to get more info about these farmers' experiences or to discuss how our products can produce similar results with your crop.



**Location:** China  
**Crop:** Peppers  
**HG Products:** Breakout®, Super Potassium®  
**Results:** Grower experienced 30% increase in production, with an extended harvest. Grower received a 5% higher price on peppers. Produce had stronger skin, spicier flavor, and all-round better quality.



**HUMA GRO®**



**HUMA GRO®**

**Location:** China  
**Crop:** Potatoes  
**HG Products:** Super Potassium®  
**Results:** The image to the far right shows the yield from 2 potato plants. The grower was thrilled that the potatoes were heavier, healthier, more uniform, thicker skinned, and that the dirt fell right off the potato at harvest, which had not happened in the past. In addition, when a potato was cut open, the grower could visibly see at what stage SUPER POTASSIUM® was applied.



**HUMA GRO®**



**HUMA GRO®**



**HUMA GRO®**



**HUMA GRO®**



**HUMA GRO®**

# Product Comparison Guide

PRIMARY MACRONUTRIENTS	DESCRIPTIONS	PH
38 Special® 4-14-12	A multi-purpose blend of primary nutrients. Can be used as a starter mix.	6.5–7.5
AN-Max™ 18-0-0	An ammonium nitrogen product that is more immediately available to plants, slower to volatilize, and less affected by weather than urea.	6.0–7.0
Buffer K® 0-0-25	A potassium product with a more neutral pH complexed to maximize potassium uptake by plants.	9.0–10.0
C-Phos™ 4-25-0	Corrects calcium and phosphorus deficiencies while resisting nutrient “tie-up.”	≤ 1.0
Lucky 7® 7-7-7	Is a complete nutrient package containing most macro and micronutrients.	3.5–4.5
Sil-K® 0-0-10	Provides potassium and silica for increased strength and rigidity of the plant cells. Prevents premature fruit drop or lodging.	≥ 14
Super Nitro® 30-0-0	A complexed nitrogen source that can be foliar-applied without phytotoxicity, or soil-applied for stable nitrogen release in the root zone.	7.0–8.5
Super Phos® (Phos-Max®) 0-50-0	A concentrated phosphorus formulation for maximizing availability and uptake by plants.	≤ 1.0
Super Potassium® 0-0-40	A concentrated potassium product, complexed to maximize uptake by plant.	≥ 14.0
SECONDARY MACRO & MICRONUTRIENTS	DESCRIPTIONS	PH
44 Mag®	Provides maximum assimilation of magnesium.	1.5–2.5
Boro-Pro®	Provides effective uptake of boron.	6.6–7.6
Calcium 8-0-0	Provides maximum calcium uptake and translocation within the plant.	≤ 1.0
Cobalt	Provides effective uptake of cobalt in plants.	2.0–3.0
Comol™ 0-5-0	Provides efficient uptake of phosphorus, cobalt, and molybdenum.	1.0–2.0
Copper	Provides effective uptake of copper in plants.	2.0–3.0
Iro-Max® 12-0-0	Provides effective and rapid uptake of iron in plants.	1.5–2.5
Manganese	Provides effective uptake of manganese in plants.	1.5–2.0
Max Pak®	Is a highly stable source of many important micronutrients.	1.0–2.0
Molybdenum	Provides effective uptake of molybdenum in plants.	8.0–9.0
Nickel	Provides effective uptake of nickel in plants.	1.0–2.0
Pur Cal®	Provides maximum nitrogen-free calcium uptake and translocation within the plant.	1.5–2.5
Sulfur 8-0-0	Provides effective uptake of sulfur in plants.	0.5–1.5
Z-Max®	Provides effective uptake of zinc, sulfur, manganese, and copper in plants.	1.5–2.5
OPTIMAL GROWTH MANAGEMENT	DESCRIPTIONS	PH
Activol® 0-5-0	Formulation of nutrients and refined plant oils that increases plant tolerance to environmental stresses.	1.0–2.0
Breakout® 4-14-3	Feeds the natural metabolic process within the plant for enhanced bud initiation, flowering, and fruit set.	1.5–2.5
Crop-Gard® 1-7-1	Achieves balanced plant nutrition for better plant color, growth, development, and production.	1.0–2.0
D-Fend® 0-5-0	A foliar formulation of nutrients and refined plant oils that facilitate nutrient uptake and translocation within the plant.	1.0–2.0
Golden Pro® 5-23-4	Provides nutrients to feed the metabolic processes necessary for improved fruit sizing, quality, and yield.	≤ 1.0
Jackpot® (Yield-Max™) 0-1-20	Feeds the metabolic processes necessary for uniform fruit maturity and improved shelf life.	≥ 14
Sili-Max®	Increases the strength and rigidity of the plant cells and cell walls to prevent lodging or flopping.	11.0–12.0
Vitol® 8-16-4	Increases vertical foliar growth, fruit size, and uniformity. Improves plant recovery from environmental stresses.	1.5–2.5
SUSTAINABLE SOIL FERTILITY	DESCRIPTIONS	PH
Encapsalt® 5-0-0	Helps to diminish salt stress in the root zone.	6.0–7.0
Fertil Humus® 24-0-0	Feeds beneficial fungal activity, digests crop residue, and builds a humus-rich soil.	5.0–6.0
Fertil Soil® 5-0-0	Improves soil structure and feeds the beneficial bacteria activity in the soil.	7.5–8.5
Kleanup™ 15-0-0	A nutrient and soil surfactant that aids in the breakdown and detoxification of harmful chemicals.	5.5–6.5
Surf-Max®	A surfactant that improves water penetration and lateral movement within the root zone.	4.0–5.0
Zap® 8-0-0	Creates a balanced soil environment by feeding a strong, vigorous soil biology.	4.0–5.0
CARBON-RICH ORGANIC ACIDS	DESCRIPTIONS	PH
Fulvi Pro® 10/20	Fulvic-acid product that provides a carbon food source for the beneficial microbial population in the soil.	1.5–2.5
Huma Burst® (Multiple Granular Sizes)	Granulized humic acid products used for carbon-depleted soil conditions.	(granular)
Huma Pro® 16	Liquid humic acid product used for carbon-depleted soil conditions.	11.0–12.0
X-Tend® 6-2-0	Increases efficiency, release, and uptake of fertilizers.	8.0–9.0
X-Tend® B 6-2-0	Increases efficiency, release, and uptake of fertilizers, with blue dye added.	8.0–9.0
ZERO-RESIDUE CROP PROTECTION	DESCRIPTIONS	PH
Promax®	Broad-spectrum soil fungicide and nematicide.	5.0–6.0
Proud 3®	Foliar insecticide, miticide, bactericide, and fungicide.	4.5–6.0

WEIGHT	N %	P <sub>2</sub> O <sub>5</sub> %	K <sub>2</sub> O %	CA %	MG %	S %	FE %	B %	MO %	ZN %	CU %	MN %	CO %	SIO <sub>2</sub> %	NI %	FA	HA	Organic Matter %
11.68 lb/gal, 1.35 kg/L	4.00	14.00	12.00			8.00												0.20
10.60 lb/gal, 1.29 kg/L	18.00																	1.50
12.30 lb/gal, 1.45 kg/L			25.00															15.50
12.27 lb/gal, 1.35 kg/L	4.00	25.00		5.00														0.10
10.80 lb/gal, 1.20 kg/L	7.00	7.00	7.00		0.50	1.00	0.10	0.02	0.006	0.05		0.05	0.01					7.00
10.77 lb/gal, 1.20 kg/L			10.00											5.00				0.05
10.60 lb/gal, 1.20 kg/L	30.00																	11.00
12.44 lb/gal, 1.40 kg/L		50.00																0.01
12.18 lb/gal, 1.35 kg/L			40.00															0.50
WEIGHT	N %	P <sub>2</sub> O <sub>5</sub> %	K <sub>2</sub> O %	CA %	MG %	S %	FE %	B %	MO %	ZN %	CU %	MN %	CO %	SIO <sub>2</sub> %	NI %	FA	HA	Organic Matter %
10.68 lb/gal, 1.20 kg/L					5.00	5.50												0.50
10.85 lb/gal, 1.30 kg/L								10.00										10.00
11.60 lb/gal, 1.39 kg/L	8.00			10.00														0.30
9.60 lb/gal, 1.15 kg/L						2.00							5.00					0.50
9.76 lb/gal, 1.17 kg/L		5.00							3.00				1.00					0.10
9.77 lb/gal, 1.10 kg/L						3.00					5.00							0.20
10.90 lb/gal, 1.20 kg/L	12.00					3.00	8.00											10.50
9.18 lb/gal, 1.10 kg/L						2.50						5.00						4.50
10.70 lb/gal, 1.30 kg/L						3.00	2.00	0.60	0.05	3.50	1.00	1.00	0.05					6.00
9.16 lb/gal, 1.10 kg/L									5.00									0.02
10.60 lb/gal, 1.20 kg/L						6.00										10.00		0.50
10.85 lb/gal, 1.39 kg/L				8.00														
10.35 lb/gal, 1.20 kg/L	8.00					10.00												0.10
11.51 lb/gal, 1.30 kg/L						5.00				8.00	0.50	2.00						0.02
WEIGHT	N %	P <sub>2</sub> O <sub>5</sub> %	K <sub>2</sub> O %	CA %	MG %	S %	FE %	B %	MO %	ZN %	CU %	MN %	CO %	SIO <sub>2</sub> %	NI %	FA	HA	Organic Matter %
8.68 lb/gal, 1.00 kg/L		5.00					0.10			0.05		0.05						4.00
10.77 lb/gal, 1.20 kg/L	4.00	14.00	3.00															10.50
10.44 lb/gal, 1.20 kg/L	1.00	7.00	1.00			2.00				2.00	0.20	0.50						3.00
8.85 lb/gal, 1.06 kg/L		5.00					0.10			0.05		0.05						3.00
12.43 lb/gal, 1.40 kg/L	5.00	23.00	4.00	4.00														0.10
10.87 lb/gal, 1.25 kg/L		1.00	20.00					0.50										5.50
10.60 lb/gal, 1.15 kg/L														20.00				0.05
10.10 lb/gal, 1.25 kg/L	8.00	16.00	4.00			1.00	0.10			0.05		0.05						6.00
WEIGHT	N %	P <sub>2</sub> O <sub>5</sub> %	K <sub>2</sub> O %	CA %	MG %	S %	FE %	B %	MO %	ZN %	CU %	MN %	CO %	SIO <sub>2</sub> %	NI %	FA	HA	Organic Matter %
8.76 lb/gal, 1.00 kg/L	5.00																	9.00
10.43 lb/gal, 1.20 kg/L	24.00						0.10			0.05		0.05						11.50
8.76 lb/gal, 1.05 kg/L	5.00						0.10			0.05		0.05						11.00
9.40 lb/gal, 1.13 kg/L	15.00						0.05			0.03		0.03						8.00
9.07 lb/gal, 1.00 kg/L																		
9.18 lb/gal, 1.00 kg/L	8.00					1.00	0.10			0.05		0.05						8.50
WEIGHT	N %	P <sub>2</sub> O <sub>5</sub> %	K <sub>2</sub> O %	CA %	MG %	S %	FE %	B %	MO %	ZN %	CU %	MN %	CO %	SIO <sub>2</sub> %	NI %	FA	HA	Organic Matter %
9.18 lb/gal, 1.05 kg/L																10/20		6.00
																	50-80	
9.01 lb/gal, 1.10 kg/L																	16	10.0
8.68 lb/gal, 1.05 kg/L	6.00	2.00																9.00
8.68 lb/gal, 1.05 kg/L	6.00	2.00																9.00
WEIGHT	N %	P <sub>2</sub> O <sub>5</sub> %	K <sub>2</sub> O %	CA %	MG %	S %	FE %	B %	MO %	ZN %	CU %	MN %	CO %	SIO <sub>2</sub> %	NI %	FA	HA	Organic Matter %
9.12 lb/gal, 1.09 kg/L																		
8.34 lb/gal, 1.00 kg/L																		

# Mixing Guide / pH Chart

1. When in doubt as to compatibility, please perform a jar test before mixing in large quantities.
2. The mixing container should be fiberglass, plastic, stainless steel, or rubber lined, and capable of withstanding heat exchanges.
3. Use a large enough container to adequately handle the initial mixture, plus room in the container for at least twice the water.
4. Use a good stir rod such as a 3-to-6-foot PVC pipe, or use a mix tank agitation system.
5. Start making the mix by adding into the container half the water you plan to use.
6. Use a 3-gallon measuring bucket with a handle for measuring the products to add and/or use a 1-quart/1-liter measuring pitcher with ounces and/ or mL increments for small measurements.
7. Add in or mix the HUMA GRO® products into the water in the order from most acidic to most basic or alkaline. From pH ( $\leq 1.0$ ) to pH ( $\geq 14.0$ ) as shown below.
8. Fill the container capacity with the rest of the water you will use.
9. As a rule of thumb, leave the products with the most basic pHs ( $> 7.0$ ) such as SUPER POTASSIUM® until the very last and add very slowly. If there is a reaction it will be immediate, but with a little patience and stirring it should mix in well.
10. If adding a pesticide or fungicide to the fertilizer solution, add after all the HUMA GRO® products are thoroughly mixed. Do a jar test first for compatibility.
11. Never apply total HUMA GRO® products plus other ag chemicals at more than 10% concentration of the finished application mix.

## PRODUCT pH (Acidic to Basic)

C-PHOS™	$\leq 1.0$	SURF-MAX®	4.0–5.0
CALCIUM	$\leq 1.0$	ZAP®	4.0–5.0
GOLDEN PRO®	$\leq 1.0$	PROUD 3®	4.5–6.0
SUPER PHOS® (PHOS-MAX®)	$\leq 1.0$	FERTIL HUMUS®	5.0–6.0
SULFUR	0.5–1.5	PROMAX®	5.0–6.0
ACTIVOL®	1.0–2.0	KLEENUP™	5.5–6.5
COMOL™	1.0–2.0	AN-MAX®	6.0–7.0
CROP-GARD®	1.0–2.0	ENCAPSALT®	6.0–7.0
D-FEND®	1.0–2.0	38 SPECIAL®	6.5–7.5
NICKEL	1.0–2.0	BORO-PRO®	6.6–7.6
MAX PAK®	1.0–2.0	SUPER NITRO®	7.0–8.5
44-MAG®	1.5–2.5	FERTIL SOIL®	7.5–8.5
BREAKOUT®	1.5–2.5	MOLYBDENUM	8.0–9.0
FULVI PRO®	1.5–2.5	X-TEND®	8.0–9.0
IRO-MAX®	1.5–2.5	X-TEND® B	8.0–9.0
MANGANESE	1.5–2.0	BUFFER K®	9.0–10.0
PUR CAL®	1.5–2.5	HUMA PRO® 16	11.0–12.0
VITOL®	1.5–2.5	SILI-MAX®	11.0–12.0
Z-MAX®	1.5–2.5	JACKPOT® (YIELD-MAX™)	$\geq 14.0$
COBALT	2.0–3.0	SIL-K®	$\geq 14.0$
COPPER	2.0–3.0	SUPER POTASSIUM®	$\geq 14.0$
LUCKY 7®	3.5–4.5		

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**Fertilgold®**  
ORGANICS



Fertilgold® Organics products were created by a family/employee-owned company with over 45 years of experience producing natural crop nutrition and protection products. They are subject to strict quality-control production processes to ensure that customers receive a consistent, effective product that they can count on to provide a premium organic crop. Our liquid products are powered by Micro Carbon Technology®, a unique carbon-based nutrient carrier that improves nutrient uptake effectiveness—getting more nutrient into the plant, faster, than with other forms of fertilizer. Our liquid Fertilgold® Organics products offer the following advantages:

- Easy to apply at various stages of plant growth
- Increased options for application to soil or foliage using existing equipment and systems
- Easy blending with other crop inputs
- Uniform products for precise spray or drip application
- Plants benefit almost instantly, can quickly recover from nutrient deficiencies
- Apply liquid products foliarly without risk of phytotoxicity

## SOIL

### Fertilgold® Soil (5-0-0)

Improves soil structure and enhances the beneficial soil microbial community; flocculates clay particles in soil for better aeration, water-holding, and nutrient availability.

## MACRONUTRIENTS

### Fertilgold® N-5.5 (5.5-0-0)

An organic nitrogen source derived from soy protein hydrolysis that can be foliar or soil-applied, maintaining nitrogen stability in the root zone. It reduces nitrogen losses from leaching and volatilization.

### Fertilgold® K-6 (0-0-6)

An organic potassium product derived from potassium sulfate that effectively maximizes potassium uptake by plants.

### Fertilgold® NK (3-0-4)

An organic nitrogen and potassium product that provides excellent foliar and soil nutrition. This product combination provides crops with a phosphorus-free nutrient boost when phosphorus is already present or when additional phosphorus is not needed.

### Fertilgold® 3-2-4 (3-2-4)

A complete NPK product that provides an excellent foundation for seed germination and plant flowering, as well as grain fill, fruit sizing, and preharvest uniformity.

## MICRONUTRIENTS

### Fertilgold® B (3%)

Boron is required for cellular strength and growth, plant vigor, and fruit development.

### Fertilgold® Ca (8%)

Calcium is required for cellular strength and growth, plant vigor, and fruit development.

### Fertilgold® Co (5%)

Cobalt is a micronutrient essential for nodulation of legumes, microbial function, and recovery from plant stress. It is the central element of the B-12 vitamin.

### Fertilgold® Cu (5%)

Copper is a micronutrient involved in many plant metabolic processes including photosynthesis, enzyme activity, protein metabolism, nitrogen regulation, and plant vigor.

### Fertilgold® Fe (5%)

Iron is a key micronutrient involved in photosynthesis that also enables other biochemical processes such as respiration, symbiotic nitrogen fixation, and transfer of ATP within the plant.

### Fertilgold® Mg (5%)

Magnesium, essential for photosynthesis, is also an activator for enzymes involved in the production and use of ATP and is needed for the creation of DNA and RNA.

### Fertilgold® Mn (5%)

Manganese is a micronutrient involved in many plant metabolic activities, including photosynthesis, enzyme activity, and nutrient regulation.

### Fertilgold® Mo (5%)

Molybdenum is a micronutrient necessary in enzyme activities and particularly in nitrogen metabolism.

### Fertilgold® MoN (Mo 5%, N 1%)

This product combines molybdenum with nitrogen.

### Fertilgold® Zn (10%)

Zinc is needed for cell multiplication and plays an important role in water uptake, phytohormone activity, and the uptake of other nutrients. Zinc nutrition plays a central role in a number of plant defenses against environmental stresses.

### Fertilgold® Micros I

A highly stable source of multiple micronutrients (B 0.4%, Cu 0.16%, Fe 4.0%, Mn 2.0%, Mo 0.128%, and Zn 1.0%).

## LIQUID HUMIC & FULVIC ACIDS

### Fertilgold® XT

An organic source of Micro Carbon Technology® formulated with organic acids and nutrients to improve the efficiency, release, and uptake of fertilizers.

## DRY HUMIC & FULVIC ACIDS

### Fertilgold® MicroHumic®

With an average particle size of 15 microns, this product can be mixed with water to create a suspension with maximum concentration of humic/fulvic acids. Excellent for seed coating.

### Fertilgold® Pulverized

85% of product is less than 50 mesh, typically used for extraction of humic and fulvic acids.

### Fertilgold® Soluble Powder

Modified potassium humate powder is designed to be mixed in solution and applied to soil. It is soluble at pHs of 5.5 and above.

### Fertilgold® Greens

Screened to a particle size of 1–2 mm. An excellent broadcast turf humate supplement, it can also be applied to all crops.

### Fertilgold® 1–3mm

A humate supplement that can be broadcast or banded, either pre-plant, with seed, or after planting.

### Fertilgold® 2–6mm

A humate supplement that can be broadcast or banded, either pre-plant, with seed, or after planting.

### Fertilgold® K Hume

Combined with potassium hydroxide to make an excellent soil conditioner, its 76% solubility speeds activity in the soil for enhanced microbial uptake and growth.

### Fertilgold® Prilled

A pure, dry humate created through a patented dispersing granule process that results in a spherical granule that contains thousands of micro-sized humate particles and dissolves into the soil when wet.

### Fertilgold® 6mm(-)

Ideal for broadcast spreading on soil preplant, with quarter-inch and smaller particle sizes.

## BIOPESTICIDES

### Fertilgold® Promax®

Broad-spectrum fungicide and nematocide for soil application.

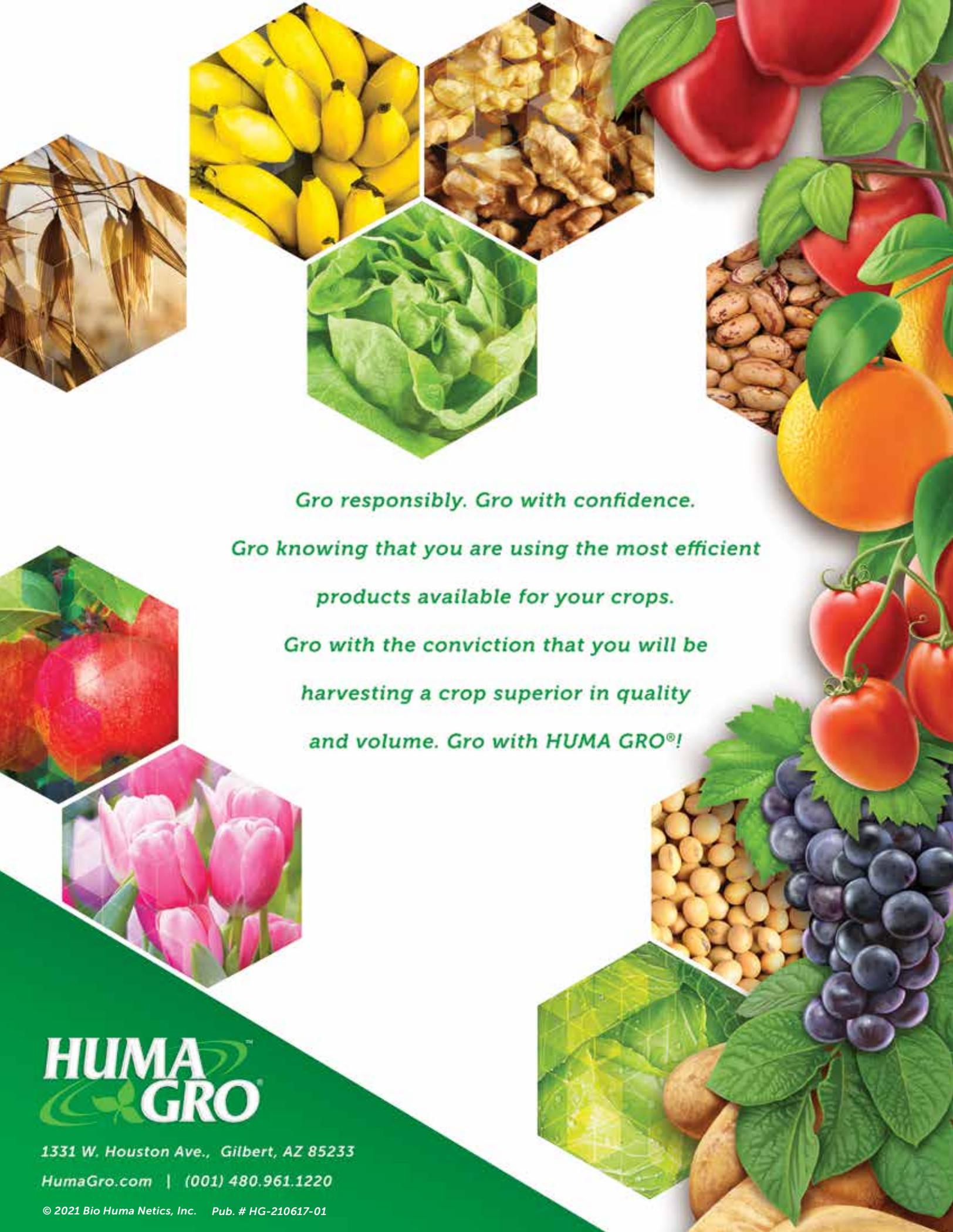
### Fertilgold® Proud 3®

Broad-spectrum insecticide, miticide, and fungicide for foliar application.

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*Gro knowing that you are using the most efficient  
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*Gro with the conviction that you will be  
harvesting a crop superior in quality  
and volume. Gro with HUMA GRO®!*

**HUMA  
GRO**

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