



**Biofeed<sup>®</sup>**

**PROFESSIONAL TURF PRODUCTS**

Biofeed® provides the professional turf manager with dynamic bio-products for both plant nutrition and soil management.

These enzyme-based, non-toxic solutions are formulated to condition and build healthier soil, while they supply nutrients in a plant available form. This means that fewer nutrients are wasted.

The result is a vibrant, balanced, natural environment where beneficial aerobic bacteria can flourish with a focus on the long-range needs of quality greens, tees, fairways, sports turf and water systems.

We strive in every way to provide products and technologies that work in harmony with nature with no harmful impact on our environment.

This is what we have achieved with our combination of technologies:

- Acti-Cell Technology® (ACT)
- Chelation Technology
- H<sub>2</sub>O-Dehydrogenase (HDH) Technology
- Nutrient-Delivery Technology
- Enzyme-Based Technology

### **Ernie Pock, GCSAA Member**

“ My greens have continued to be firmer, faster, and have better root structure since we have been on a complete Biofeed program. My clipping yields on greens are very consistent each and every day, producing great putting surfaces without compromising turf quality. My fairways continue to transition from Ryegrass back to Bermuda grass better every year with less inputs. By using Biofeed’s product line, it helps Grayhawk continue to have great playing surfaces without increasing operational costs. ”

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A high phosphate nutrient solution to promote stronger metabolic activity, cellular growth, and stronger horizontal stem and leaf growth.

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Provides a dynamic blend of nitrogen and phosphorus to promote strong stems, leaf growth, and deeper root growth.

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Primary nutrients to promote efficient cellular function, root growth, and strong vertical growth that is essential to managing high-quality professional turf.

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Combines elemental molybdenum to support vital biochemical reactions. Once applied to the leaf, BIOFEED TRASE® rapidly moves throughout the xylem and phloem conductive tissue of the turf plant.

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Liquid iron to increase leaf absorption. Iron promotes plant growth, antioxidant, plant enzyme activity and chlorophyll production for deeper green leaf color.

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Contains micronutrients to maximize leaf absorption. These nutrients are required for plant growth, antioxidant and enzyme activity and chlorophyll production.

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A bio-chemical plant and soil additive including molecular and intracellular components plus nitrogen in a bio-available form.

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Neutralizes salts in soils and irrigation water that can tie-up essential plant nutrients. It also helps dissolve mineral scale from irrigation lines and emitters, restoring water flow and sprinkler efficiency.

### HIGH SPEED GREENS

**QUICK-6™ 1-0-5 | Foliar Silicate Solution PAGE 18**

A rich source of potassium and silica for efficient leaf absorption and translocation throughout the plant. Helps improve turf stand and green speed or stimp rating by increasing stem and leaf rigidity.

### POND & LAKE MANAGEMENT

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# ACTI-CELL TECHNOLOGY® (ACT)



Biofeed® products come to life through our **Acti-Cell Technology® (ACT)**. ACT® is biologically generated using specific organic compounds which are transformed into unique, hydrolyzed plant proteins, organic matter and other beneficial organic compounds through a proprietary process of biological transformation. Biofeed® products are comprised of organic components with exceptionally small structures that readily form soluble complexes required for aerobic biological activity in soil and greater cell structure in the plant.

## Helps Improve Chlorophyll Production

Increased chlorophyll production results in more conversion of light into energy for leaf maturation, stem growth and root growth. Chlorophyll creates the dense, deep green leaf color of plants, trees, and turf.



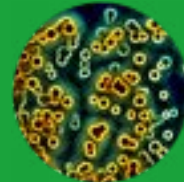
## Helps Release Tied-Up Soil Nutrients

Natural agents dissolve minerals and nutrients that are tied-up and unavailable to hungry roots. ACT® remains active long after application to improve the soil's Cation Exchange Capacity (CEC).



## Supports Beneficial Aerobic Microbes

Soil that is teeming with aerobic microbial activity supports stronger roots, plants, trees and turf growth. This also helps to keep disease causing factors in check, and reduces the occurrence of black layer, which is toxic to delicate plant roots.



## Provides Balanced Nutrition

Plant nutrients feed tees, fairways and greens. Providing proper plant nutrition and balanced soil care is the key to growing award-winning golf courses. Formulated for use on all types of turf grass, year-round!



## Releases Oxygen and Hydrogen Into the Soil & Water

H<sub>2</sub>O Dehydrogenase (HDH) enzymes that have the unique ability to cleave, or split, the water molecule. When HDH splits the water molecule, oxygen and hydrogen are released to support the growth of aerobic microbes in both soil and water systems.



## Neutralizes Salt & Helps Clean Irrigation Systems

Neutralizes harmful salt, allowing it to leach out of the soil. Unique, natural action reduces calcium and other mineral and salt residues that clog drip emitters and sprinkler systems.



# CHELATION TECHNOLOGY

Biofeed® has developed an advanced natural chelation technology to carry out a variety of functions.

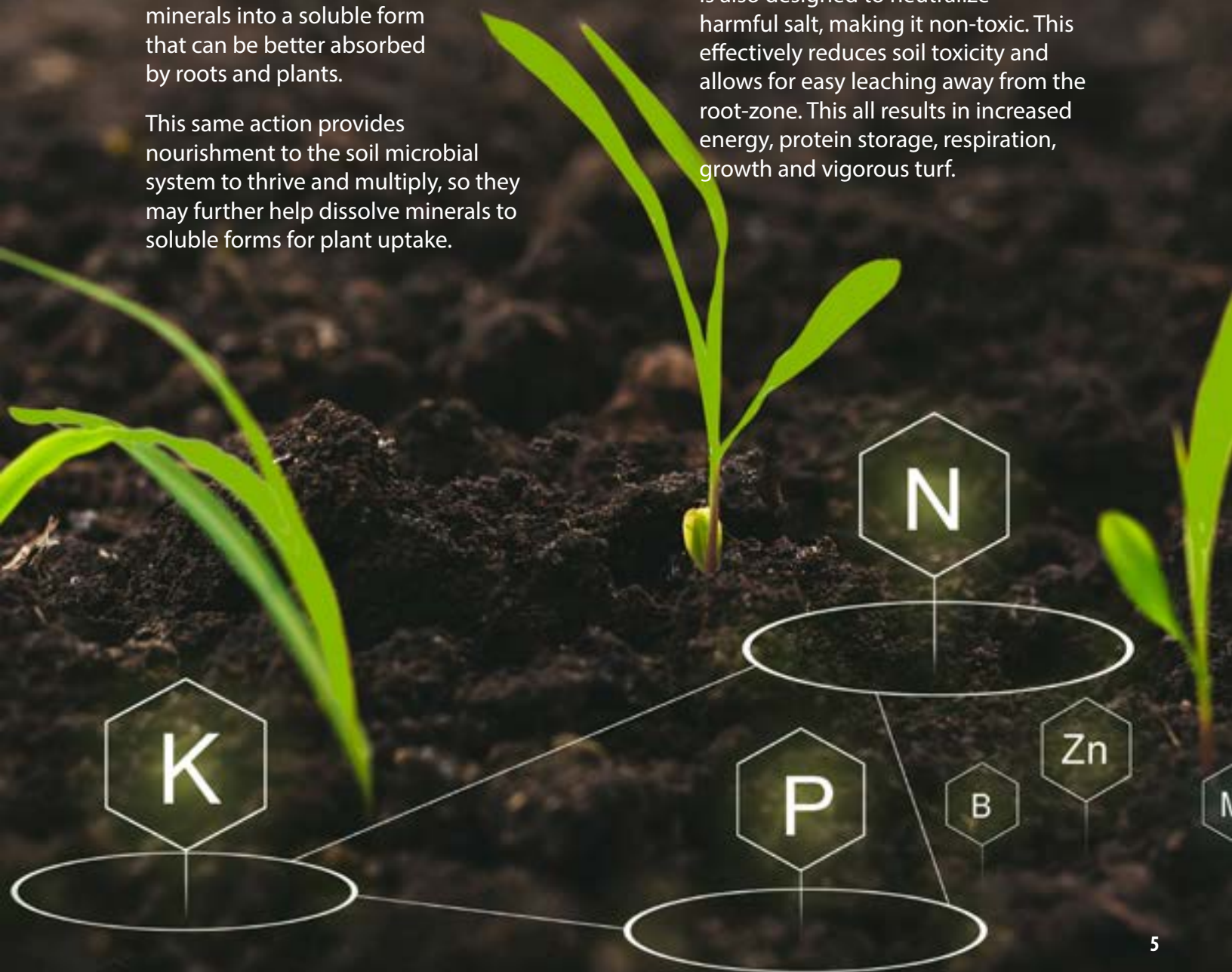
**NOTE: Our chelation technology does not use EDTA, Humic Acid, Fulvic Acid, chemicals or synthetics.**

Biofeed's chelation technology converts previously unabsorbed minerals into a soluble form that can be better absorbed by roots and plants.

This same action provides nourishment to the soil microbial system to thrive and multiply, so they may further help dissolve minerals to soluble forms for plant uptake.

Biofeed's chelation technology supports the soil microbial system which attack and consume both synthetic and organic chemical residues, further converting pollutants and chemical matters into non-harmful forms.

Biofeed's unique chelation technology is also designed to neutralize harmful salt, making it non-toxic. This effectively reduces soil toxicity and allows for easy leaching away from the root-zone. This all results in increased energy, protein storage, respiration, growth and vigorous turf.



# H<sub>2</sub>O-DEHYDROGENASE (HDH) TECHNOLOGY

## AEROBIC VS. ANAEROBIC

Scientists agree that disease factors found in both plants and water systems primarily stem from the lack of oxygen. Both water systems and soils lacking adequate oxygen are known as *anaerobic*, while water systems and soils that have adequate oxygen on a consistent basis are referred to as *aerobic*.

Anaerobic bacteria do not require oxygen to thrive. More importantly, anaerobic bacteria CANNOT survive in the presence of oxygen.

Like the human body, soil too must contain a rich supply of oxygen to remain alive and productive.

Biofeed® products contain specialized enzymes – H<sub>2</sub>O-DEHYDROGENASE (HDH) – that split the H<sub>2</sub>O water molecule to release elemental oxygen directly into the soil.

Oxygen-enriched soil results in a dramatic increase of beneficial aerobic microbial life and activity, creating a nutrient rich root-zone while at the same time digesting and destroying harmful chemical compounds and preventing disease-causing anaerobic microbes to thrive.

## AEROBIC BENEFITS:

- A highly aerobic environment helps prevent the proliferation of noxious anaerobic bacteria.
- Helps prevent black layer by delivering oxygen to the root-zone.
- Reduces dependence on mechanical aeration which, in turn, saves time and cost.
- Helps reduce the production of anaerobic bacteria which causes putrid odors and destroys tender root systems.
- Helps reduce mucilage production that blocks water and air movement in soil.
- Helps prevent chemo-trauma or chemical burn to the roots in golf greens.
- Improves chemical and metabolic oxidation/reduction reactions in soils allowing for improved nutrient uptake by turf roots while reducing disease occurrence.
- Improves water penetration, fertilizer efficiency, and overall turf quality.
- HDH enzymes oxygenate water and soil to gently lower pH as a result of freeing hydrogen from the water molecule.

# NUTRIENT-DELIVERY TECHNOLOGY

Nitrogen, Phosphorus, and Potassium (N-P-K) are essential base nutrients and Biofeed® products combine these with a scientific understanding, using the highest quality food-grade ingredients and in exact proportions needed for growers' specific applications.

The nutrients contained in Biofeed products are liquid and remain soluble at all pH levels.

Natural agents help release and deliver applied nutrients and residual nutrients tied-up in the soil. This faster, more complete uptake of nutrients by the root and plants reduces the amount of nutrients lost due to leaching away when irrigated. Upon entering the soil, Biofeed fertilizers also act as a catalyst to convert applied nutrients into nutrient-rich microbial residues that become the preferred food source for vigorous plant growth.

# ENZYME-BASED TECHNOLOGY

Biofeed® products are specialized enzyme-based formulations that contain very specific enzymes in exact combinations, proven to build living, productive soil, thriving plants, and professional turf. Enzymes play a vital role for building productive soil as well as nourishing plants and their cells. Enzymes act as catalysts to make nutrients soluble for plant uptake and cell nourishment.

- Helps make tied-up nutrients more available
- Supports beneficial aerobic soil microbes

- Helps convert toxins to non-harmful forms
- Helps increase elemental oxygen and hydrogen within the soil
- Neutralizes a variety of salts allowing them to flow freely

In addition, enzymes perform numerous other actions that are essential for optimum soil conditions and professional turf.

# BIOFEED CROP® 8-16-4 FOLIAR PHOSPHATE BLEND

**BIOFEED CROP®** is a high phosphate liquid solution to promote stronger metabolic activity, cellular growth and stronger horizontal stem and leaf growth that is essential to maintaining high-quality greens, tees and turf. Regular use of **BIOFEED CROP®** goes further than standard fertilization as it supports sugar (BRIX) production and plant vitality.

## RESULTS

Promotes more vigorous turf recovery by supplying primary nutrients commonly lost due to soil mineral tie-up as well as regular mowing and leaching.

## BENEFITS

- Helps improve turf density and ball roll (STIMP Rating)
- Use to correct phosphorus deficiency
- Helps improve root establishment of newly seeded areas
- Easily sprayed on or applied through center pivots

## GUARANTEED ANALYSIS

Total Nitrogen (N) .....	8.0%
7.0% Urea Nitrogen	
1.0% Other Water Soluble Nitrogen	
Available Phosphate (P2O5) .....	16.0%
Soluble Potash (K2O) .....	4.0%
Derived from Urea, Soy Protein Hydrolysate, Phosphoric Acid, and Potassium Hydroxide.	

## TERMINOLOGY

**BRIX** | Enhanced natural sugar production (BRIX) promotes strong stem, leaf, and deeper root growth. BRIX also promotes plant vitality which helps reduce disease occurrence.

**NITROGEN** | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

**PHOSPHORUS** | Promotes energy production in living plants.

**POTASSIUM** | Directs nitrogen use and water use in plants.

**STIMP RATING** | The stimp rating of a putting green is a numerical value that represents how fast the golf ball rolls on the putting surface. Golfers call this rating the green speed.

## APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

**BIOFEED CROP® is highly concentrated for pro-level performance and value.** Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

## GREENS, TEES AND TURF:

Foliar apply 1-2.5 gallons in 50-100 gallons of water per acre, or for smaller areas apply 4-16 ounces in 5-10 gallons of water per 1000 square feet. Apply every 7-14 days or as needed with sprayer. Water normally following application.

## PHYSICAL CHARACTERISTICS

- Weight: 10.5 lbs./gal. (0.84 lbs. N/gal.)
- pH Range: 7.0-8.0
- Enzymatic activity may affect pH during storage.



# CARB-MAX<sup>®</sup> 6-20-0 FOLIAR & SOIL PHOSPHATE

CARB-MAX<sup>®</sup> provides a dynamic blend of liquid nitrogen and phosphorus for easy absorption and translocation in all plants and turf resulting in enhanced sugar (BRIX) production and plant vigor.

## RESULTS

A dynamic blend of nitrogen and phosphorus for easier absorption and translocation in all turf resulting in enhanced sugar (BRIX) production. These combine to promote strong stem and leaf growth, deeper root growth and earlier maturity of turf.

## BENEFITS

- Provides phosphate nutrition for professional turf
- Promotes early plant maturity and root establishment of newly seeded areas
- Promotes horizontal growth to produce dense turf
- Improves ball roll speed (STIMP Rating)

## GUARANTEED ANALYSIS

Total Nitrogen (N) .....	6.0%
5.0% Ammoniacal Nitrogen	
1.0% Other Water Soluble Nitrogen	
Available Phosphate (P <sub>2</sub> O <sub>5</sub> ) .....	20.0%
Derived From: Soy Protein Hydrolysate and Ammonium Phosphate.	

### ALSO CONTAINS NON-PLANT FOOD INGREDIENT:

18.0% Organic Matter and 1.0% Molasses (Microbe Food)

## TERMINOLOGY

**BRIX** | Enhanced natural sugar production (BRIX) promotes strong stem, leaf, and deeper root growth.

**MICROBE FOOD** | To grow and multiply, good aerobic bacteria needs food (nutrients), water, proper temperature, time, air, proper acidity (pH) and proper salt levels.

**NITROGEN** | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

**PHOSPHORUS** | Promotes energy production in living plants.

## APPLICATION

### SHAKE WELL OR STIR BEFORE USE.

CARB-MAX<sup>®</sup> is highly concentrated for pro-level performance and value. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

### FOLIAR APPLICATION RATES:

Professional Sports Turf: Apply 0.5-2 gallons in 20-100 gallons of water per acre.

### SOIL RATES:

Apply 1-4 gallons per acre via fertigation or sprayer. Irrigate after application to maximize distribution into root zone.

### FERTIGATION AND DRIP IRRIGATION RATES:

Turf: Use 1-4 gallons per acre per irrigation. Continue irrigation after application to maximize fertilizer distribution.

### PHYSICAL CHARACTERISTICS

- Weight: 10.7 lbs./gal. (0.642 lbs. N/gal.)
- pH Range: 5.5-6.5
- Enzymatic activity may affect pH during storage.

# GT PRO<sup>®</sup> 9-4-12 GREENS & TEES FOLIAR

GT PRO<sup>®</sup> provides a dynamic blend of primary nutrients to promote efficient cellular function and promotes root growth and strong vertical growth that is essential to managing high quality professional turf.

## RESULTS

Supplies essential nutrients commonly lost due to regular mowing and leaching.

Regular use of GT PRO<sup>®</sup> supports dynamic cellular function and growth.

## BENEFITS

- Provides phosphate nutrition for all professional turf
- Enhances root establishment and early plant maturity
- Promotes horizontal growth to produce dense turf
- Improves ball roll speed (STIMP Rating).

## GUARANTEED ANALYSIS

Total Nitrogen (N) ..... 9.0%  
4.0% Urea Nitrogen  
2.0% Ammoniacal Nitrogen  
2.0% Nitrate Nitrogen  
1.0% Other Water Soluble Nitrogen

Available Phosphate (P<sub>2</sub>O<sub>5</sub>) ..... 4.0%  
Soluble Potash (K<sub>2</sub>O) ..... 12.0%

Derived From: Urea, Soy Protein Hydrolysate, Phosphoric Acid, Potassium Hydroxide, and Potassium Nitrate.

ALSO CONTAINS NON-PLANT FOOD INGREDIENT:  
12.0% Organic Matter

## APPLICATION

SHAKE WELL OR STIR BEFORE USE.

GT PRO<sup>®</sup> is highly concentrated for pro-level performance and value. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

## GREENS, TEES AND TURF:

Foliar apply 1-5 gallons in 50-100 gallons of water per acre, or for smaller areas apply 8-16 ounces in 5-10 gallons of water per 1000 square feet. Apply every 7-14 days or as needed with sprayer. Water normally following application.

## PHYSICAL CHARACTERISTICS

- Weight: 10.5 lbs./gal. (0.945 lbs. N/gal.)
- pH Range: 9.3-10.3
- Enzymatic activity may affect pH during storage.

## TERMINOLOGY

**NITROGEN** | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

**PHOSPHORUS** | Promotes energy production in living plants.

**POTASSIUM** | Directs nitrogen use and water use in plants.

**STIMP RATING** | The stimp rating of a putting green is a numerical value that represents how fast the golf ball rolls on the putting surface. Golfers call this rating the green speed.

# K-PRO<sup>®</sup> 0-0-20 FOLIAR POTASSIUM FERTILIZER

K-PRO<sup>®</sup> is a foliar applied liquid potassium solution. K-PRO<sup>®</sup> encourages nitrogen metabolism and promotes root growth. The result is a dynamic plant response due to its plant-friendly, liquid formula. Use K-PRO<sup>®</sup> to balance your professional turf nutritional program.

## RESULTS

This near-neutral solution allows for immediate uptake through the leaves and roots followed by translocation throughout the entire plant.

This improves the quantity and ratio of antioxidants produced by plants. This results in faster recovery during extremes in temperature and water stress.

## BENEFITS

- Use to correct potassium deficiency
- Promotes root growth and leaf maturation
- Helps improve UV tolerance
- Supports beneficial aerobic soil microbial activity
- Faster cell repair following mowing and wear

## GUARANTEED ANALYSIS

Soluble Potash (K2O) .....20.0%

Derived from Potassium Hydroxide.

## TERMINOLOGY

**ANTIOXIDANT** | An additive known to attach to – and shut down – free radicals.

**POTASSIUM** | Directs nitrogen use and water use in plants.

**UV** | Ultraviolet (UV) wavelengths can reduce plant genome stability, growth, and productivity by damaging the plant's DNA.

## APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

K-PRO<sup>®</sup> is highly concentrated for pro-level performance and value. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

## GREENS, TEES AND TURF:

As a foliar, apply 1-2.5 gallons in 50-100 gallons of water per acre, or for smaller areas apply 4-16 ounces in 10-20 gallons of water per 1000 square feet, or apply through a fertilizer injection system. Frequency and rate of applications may vary.

## PHYSICAL CHARACTERISTICS

- Weight: 10.9 lbs./gal.
- pH Range: 11.5-12.5
- Enzymatic activity may affect pH during storage.

# N-30 30-0-0 LIQUID NITROGEN

N-30 provides liquid nitrogen in four plant available forms for efficient absorption into the leaf and roots. N-30 contains nitrogen that is easily absorbed in hot or cold climates. Use on almost all types of turf.

## RESULTS

Without the nitrogen required to make proteins, plants wither and die. Some proteins act as structural units in plant cells while others act as enzymes, making possible many of the biochemical reactions on which life is based.

## BENEFITS

- Promotes deep green leaf color
- Helps improve ball roll and play on golf greens
- Provides balanced nutrition for turf, shrubs, trees and flowers
- Supports beneficial aerobic soil microbes

## GUARANTEED ANALYSIS

Total Nitrogen (N).....	30.0%
7.0% Ammoniacal Nitrogen	
7.0% Nitrate Nitrogen	
14.0% Urea Nitrogen	
2.0% Water Soluble Organic Nitrogen	

Derived from Ammonium Nitrate, Urea and Soy Protein Hydrolysate.

## TERMINOLOGY

**ATP** | ATP (adenosine triphosphate) allows plant cells to conserve and use the energy released in metabolism.

**CHLOROPHYLL** | A natural compound present in green plants that gives them their color. It helps plants to absorb energy from the sun as they undergo the process of photosynthesis.

**NITROGEN** | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

## APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

**N-30 is highly concentrated for pro-level performance and value.** Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products. Follow directions closely to avoid fertilizer burn of your plants.

**GREENS, TEES AND TURF:** Apply 2-10 gallons per acre, or for smaller areas apply 6-30 ounces per 1000 square feet, depending on turf or soil requirements. Apply via fertigation every 30 days or as required. Water normally following application.

## PHYSICAL CHARACTERISTICS

- Weight: 10.8 lbs./gal. (3.24 lbs. N/gal.)
- pH Range: 7.5-8.5
- Enzymatic activity may affect pH during storage.

# BIOFEED TRASE®

## NITROGEN CO-ENZYME

**BIOFEED TRASE®** contains elemental Co-Enzymes to support vital biochemical reactions. Once applied to the leaf, BIOFEED TRASE® rapidly moves throughout the xylem and phloem conductive tissue of the turf plant.

### RESULTS

When present at proper levels, BIOFEED TRASE® enhances nitrogen efficiency and minimizes stress by catalyzing the enzymatic reduction of nitrites and nitrates that may accumulate in plant tissues. In the soil and root system of various plants, molybdenum acts as a Co-Enzyme for nitrogen fixation by beneficial microbes.

### BENEFITS

- Supports nitrogen metabolism
- Provides a key element in the conversion of inorganic phosphorus into organic forms in the plant

### GUARANTEED ANALYSIS

Molybdenum (Mo)..... 6.0%  
Derived from Sodium Molybdate. (Co-Enzyme)

### TERMINOLOGY

**MOLYBDENUM** | Required by enzymes involved with nitrogen conversion and reduction as well as symbiotic nitrogen fixation.

**PHLOEM** | The vascular tissue in plants that conducts sugars and other metabolic products downward from the leaves.

**XYLEM** | The vascular tissue in plants that conducts water and dissolved nutrients upward from the root and also helps to form the woody element in the stem.

### APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

**BIOFEED TRASE® is a highly concentrated Co-Enzyme for pro-level nitrogen performance and value.** Jar test for compatibility prior to final tank mixing with other products.

### GREENS, TEES AND TURF:

Apply 2-4 ounces in the dosage of nitrogen to be applied per acre or in 25-50 gallons of water per acre, or for smaller areas apply 0.1 ounce in 5-10 gallons of water per 1000 square feet. Apply every 30 days. Water normally following application.

### PHYSICAL CHARACTERISTICS

- Weight: 9.1 lbs./gal.
- pH Range: 7.2-8.2
- Enzymatic activity may affect pH during storage.



*Adding 2-4 ounces of TRACE per acre is like an insurance policy for our nitrogen applications on over 300 acres of turf*

*Mick Williamson, MMM Landscape  
Morrison Ranch Properties  
Gilbert, AZ*

# MICRO-Fe™ LIQUID IRON

MICRO-Fe™ contains iron in a liquid solution to increase leaf absorption of this important element.

## RESULTS

Promotes strong plant development, improved antioxidant production, plant enzyme activity and chlorophyll production for deeper green leaf color.

## BENEFITS

- Use to correct iron deficiency
- Promotes deep green leaf color
- Supports beneficial aerobic soil microbes

## GUARANTEED ANALYSIS

Sulfur (S) .....	3.0%
Iron (Fe) .....	6.0%
Derived from Ferrous Sulfate.	

## TERMINOLOGY

**ANTIOXIDANT** | An additive known to attach to and buffer free radicals.

**CHLOROPHYLL** | A natural compound present in green plants that gives them their color. It helps plants to absorb energy from the sun as they undergo the process of photosynthesis.

**IRON** | Critical to respiration and photosynthesis in all plants.

**PLANT ENZYME ACTIVITY** | Enzymes are the tools that soil microbes use to make nutrients available for microbial and plant uptake.

**SULFUR** | Used in the formation of amino acids, proteins, and oils. It is necessary for chlorophyll formation.

## APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

MICRO-Fe™ is highly concentrated for pro-level performance and value. Dilute with water prior to application to ensure adequate coverage.

## GREENS, TEES AND TURF:

Foliar apply 1-2 gallons in 50-100 gallons of water per acre or for smaller areas apply 4-8 ounces in 3-5 gallons of water per 1000 square feet. Apply every 7-10 days or as needed with sprayer. DO NOT IRRIGATE for 30-60 minutes following application to allow for maximum foliar uptake.

## PHYSICAL CHARACTERISTICS

- Weight: 10.6 lbs./gal.
- pH Range: 2.5-3.5
- Enzymatic activity may affect pH during storage.

# MICRO-H™ FOLIAR MICRONUTRIENT BLEND

**MICRO-H™** Provides a powerful combination of micronutrients required for stronger plant development, improved antioxidant and enzyme activity, and chlorophyll production which aids in producing deeper green leaf color.

## RESULTS

Powerful micronutrients combined to maximize leaf absorption and root uptake.

## BENEFITS

- Promotes deep green leaf color
- Supports beneficial aerobic soil microbes
- Provides trace-element nutrition for growing high quality plants and turf grass

## GUARANTEED ANALYSIS

Sulfur (S) .....	3.00%
Copper (Cu) .....	0.05%
Iron (Fe) .....	2.00%
Manganese (Mn) .....	2.00%
Molybdenum (Mo) .....	0.08%
Zinc (Zn) .....	2.00%

Derived from: Copper Sulfate, Iron Sulfate, Manganese Sulfate, Zinc Sulfate and Sodium Molybdate.

ALSO CONTAINS NON-PLANT FOOD INGREDIENT:  
14.0% Organic Matter

## TERMINOLOGY

**COPPER** | Chlorophyll production, photosynthesis, and respiration in plants.

**IRON** | Respiration and photosynthesis in all plants.

**MANGANESE** | Nitrogen use and chlorophyll production.

**MOLYBDENUM** | Required by enzymes involved with nitrogen conversion and reduction as well as symbiotic nitrogen fixation.

**SULFUR** | Used in the formation of amino acids, proteins, and oils. It is necessary for chlorophyll formation

**ZINC** | Hormone production and internode elongation.

## APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

**MICRO-H™ is highly concentrated for pro-level performance and value.** Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products. Not recommended for use in fertigation systems.

## GREENS, TEES AND TURF:

Foliar apply 1-2 gallons in 20-50 gallons of water per acre, or for smaller areas apply 4-8 ounces in 5-10 gallons of water per 1000 square feet. Apply every 7-10 days or as needed with sprayer. Do not irrigate for 30-60 minutes following application to allow complete foliar absorption.

## PHYSICAL CHARACTERISTICS

- Weight: 10.5 lbs./gal.
- pH Range: 7.2-8.2
- Enzymatic activity may affect pH during storage.

# SUPER-C™ 6-0-0 SOIL & PLANT MANAGEMENT SOLUTION

**SUPER-C™** is a bio-chemical plant and soil additive that delivers a powerful combination of nutrients which work to strengthen plant growth and promotes aerobic microbial activity below ground.

This rich combination provides cellular nutrition on a molecular level that feeds both plant cells and soil organisms to stimulate the growth of beneficial aerobic soil microbes.

## RESULTS

Promotes polysaccharide production which builds better soil structure and reduces compaction. Helps improve the oxygen content of the soil and root-zone.

Also contains organic compounds that dissolve insoluble soil minerals to enhance plant uptake, neutralizes salt to reduce toxicity, and help leach it out of the root zone.

## BENEFITS

- Builds soil crumb structure
- Enhances polysaccharide production by aerobic soil microbes
- Promotes aerobic biological activity, helping the soil to breathe
- Neutralizes a variety of salts allowing them to flow freely

## GUARANTEED ANALYSIS

Total Nitrogen (N)..... 7.0%

1.38% Nitrate Nitrogen

1.33% Ammoniacal Nitrogen

0.01% Urea Nitrogen

4.28% Organic Nitrogen

Derived from Urea and Soy Protein Hydrolysate.  
ALSO CONTAINS NON-PLANT FOOD INGREDIENT:  
25.0% Organic Matter

## TERMINOLOGY

**DISSOLVED OXYGEN** | Use of an enzyme system called H<sub>2</sub>O-Dehydrogenase (HDH) to effectively split the water molecule, releasing elemental oxygen and nitrogen within the soil.

**NITROGEN** | Provides plants the energy to grow. Part of the chlorophyll molecule giving plants their green color. Involved in photosynthesis which creates food for plants.

**POLYSACCHARIDE PRODUCTION** | Polysaccharides in soil contributes to soil aggregate stabilization.

## APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

**SUPER-C™ is highly concentrated for pro-level performance and value.** Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products. May be used in fertigation systems. Use **SUPER-C™** on all soil types year-round to support biodynamic soil fertility.

**GREENS, TURF GRASS & SOIL:** Apply 4-8 ounces in 5-20 gallons of water per 1000 square feet, or 1-2 gallons in 50-100 gallons of water per acre. Water thoroughly. Apply every 2-4 weeks or as required.

**FAIRWAYS:** Apply 1-2 quarts in 50-100 gallons of water per acre once every 30 days with sprayer, or apply through a fertilizer injection system. Water thoroughly.

## PHYSICAL CHARACTERISTICS

- Weight: 8.9 lbs./gal. (0.534 lbs. N/gal.)
- pH Range: 8.5-9.5
- Enzymatic activity may affect pH during storage.



*When it comes to creating and maintaining top-notch turf, Biofeed makes my job easier.*

*Ernie Pock, Director of Turf Management  
Grayhawk Golf Club, Scottsdale, AZ*



# CHETROL® 8-0-0 NUTRIENT MANAGEMENT SOLUTION

CHETROL® is a concentrated formula with added nitrogen that is blended to help manage a variety of salts. CHETROL® is an effective blending additive for most granular or liquid fertilizers and may increase nutrient efficiency.

CHETROL® is an effective blending additive for most granular fertilizers to increase nutrient efficiency and enhance herbicide uptake.

## RESULTS

Neutralizes salts in soils and irrigation water that often tie-up essential plant nutrients. Helps dissolve mineral scale from irrigation lines and emitters, restoring water flow and sprinkler efficiency. This process occurs due to the presence of organic molecules in the product that readily binds to minerals and salts holding them in a form that can leach out of the soil.

## BENEFITS

- Neutralizes a variety of minerals, salt, and heavy metals
- An effective blending additive for most granular and liquid fertilizers
- Helps dissolve mineral scale and salts from irrigation lines
- Enhances herbicide uptake
- Supports the breakdown of chemical and petroleum compounds

## GUARANTEED ANALYSIS

Total Nitrogen (N).....	8.0%
2.0% Ammoniacal Nitrogen	
3.0% Nitrate Nitrogen	
4.0% Other Water Soluble Nitrogen	

Derived from Urea and Soy Protein Hydrolysate.  
ALSO CONTAINS NON-PLANT FOOD INGREDIENT:  
29.0% Organic Matter

## TERMINOLOGY

**NITROGEN** | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.



*We have hundreds of customers that grow Golf Course Turf that use CHETROL® through spray applications and through their irrigation. In every case the lines remain clean of salt and mineral build-up and the soil is noticeably softer. Fertilizers also work much better, and we can reduce the application rates of them (fertilizers).*

*Joaquin Pastor, President  
Cosaveg S.A, Spain*

## APPLICATION

SHAKE WELL OR STIR BEFORE USE.

CHETROL® is highly concentrated for pro-level performance and value. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

**SOIL:** Apply 1-4 quarts per acre every 2-4 weeks by ground sprayer, water-run or through a fertilizer injector system.

**SALT REDUCTION AND NUTRIENT MANAGEMENT:** Golf Courses: Apply 1-2.5 gallons per acre every 30 days by ground sprayer or through a fertilizer injector system.

## PHYSICAL CHARACTERISTICS

- Weight: 9.5 lbs./gal. (0.76 lbs. N/gal.)
- pH Range: 8.5-9.5
- Enzymatic activity may affect pH during storage.

# QUICK-6™ 1-0-5 FOLIAR SILICATE SOLUTION

QUICK-6™ provides a rich source of potassium and soluble silica for efficient leaf absorption and translocation throughout the plant. These combine to promote strong vertical leaf and stem development that is essential to managing high quality turf.

## RESULTS

Potassium and silica assist plant development following deposition of silica in the epidermal cell walls, thus enhancing the plant's ability to point its leaves towards the light source.

Improves turf stand and ball roll speed (STIMP Rating) by increasing stem and leaf rigidity.

## BENEFITS

- Promotes strong vertical leaf and stem development
- Promotes vigor of turf stand and green speed or stimp rating
- Promotes stem and leaf rigidity

## GUARANTEED ANALYSIS

Total Nitrogen (N)..... 1.0%

1.0% Other Water Soluble Nitrogen

Soluble Potash (K<sub>2</sub>O) ..... 5.0%

Derived from Soy Protein Hydrolysate and Potassium Silicate.

ALSO CONTAINS NON-PLANT FOOD INGREDIENT:  
6.0% Silica (SiO<sub>2</sub>) derived from Potassium Silicate.

## TERMINOLOGY

**NITROGEN** | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

**POTASSIUM** | Directs nitrogen use and water use in plants.

**SILICA** | Reduces oxidative stress and enhances plant cellular integrity.

**STIMP RATING** | The stimp rating of a putting green is a numerical value that represents how fast the golf ball rolls on the putting surface. Golfers call this rating the green speed.

## APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

QUICK-6™ is highly concentrated for pro-level performance and value. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

## GREENS, TEES AND TURF:

Foliar apply 22-66 ounces in 50-100 gallons of water per acre, or for smaller areas apply 1-3 ounces per 1000 square feet in 5-10 gallons of water. Apply every 7-14 days or as needed with sprayer. Water normally following application.

## PHYSICAL CHARACTERISTICS

- Weight: 9.4 lbs./gal. (0.094 lbs. N/gal.)
- pH Range: 7.2-8.2
- Enzymatic activity may affect pH during storage.

# AQUA PRO™ ORGANIC WATER CONDITIONER

**AQUA PRO™** contains enzymes that have the unique ability to split the water (H<sub>2</sub>O) molecule releasing essential oxygen, right from the water! This action complements mechanical aeration systems to maximize oxygen levels and stimulate aerobic bacteria to digest unwanted sludge, reduce ammonia and odors.

Lakes and Ponds are costly to maintain and often contain high levels of suspended solids and unwanted nutrients which leads to algae.

## RESULTS

Applying on a regular basis supplies oxygen and provides nutrients that support beneficial aerobic bacteria, which in turn breakdown sludge in lakes and ponds.

## BENEFITS

- Reduces offensive odors
- Encourages proliferation of aerobic bacteria
- Accelerates digestion of organic matter and sludge
- Raises dissolved oxygen (DO) levels
- Reduces suspended solids
- Neutralizes pH by manner of enzymes
- Tested to be SAFE and NON-TOXIC

## INGREDIENTS

Contains: Enzymes, bio-complexed nutrients and natural neutralizers.

## TERMINOLOGY

**AEROBIC BACTERIA** | Bacteria that can grow and live only when oxygen is present.

**DISSOLVED OXYGEN** | Use of an enzyme system called H<sub>2</sub>O-Dehydrogenase (HDH) to effectively split the water molecule, releasing elemental oxygen and nitrogen within the soil.

## APPLICATION

**SHAKE WELL OR STIR BEFORE USE.**

**AQUA PRO™** may be diluted to ensure even distribution. Ideal method of application is to dilute product in a sprayer filled with water and evenly spray the solution over the top of the water.

## LAKES AND PONDS:

Apply 2.5-5 parts per million (PPM) once every 2-4 weeks until desired conditions are attained, then maintain at 2.5 PPM every 2-4 weeks.

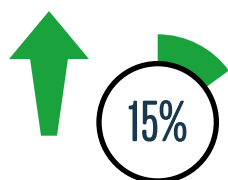
## PHYSICAL CHARACTERISTICS

- Weight: 8.6 lbs./gal.
- pH Range: 7.6-8.6
- Enzymatic activity may affect pH during storage.

# VIRGINIA TECH TURF TRIALS

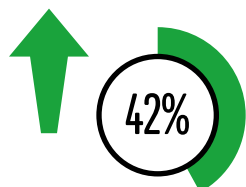
## Determine the Efficacy of Biofeed® On Bentgrass

Mature Penncross Creeping Bentgrass (*Agrostis Palustris*) growing at the Virginia Tech Turfgrass Research Center was used for this study. Periodic observations were made to determine the effects of **SUPER-C™** on salt toxicity, root growth, clipping yields, turf color, photosynthetic capacity, drought stress, and S.O.D antioxidant activity. All areas were fertilized with additional urea nitrogen at a rate of 0.5-Lb of actual nitrogen to imitate actual use conditions. The following results show the dramatic benefits of **SUPER-C™**.



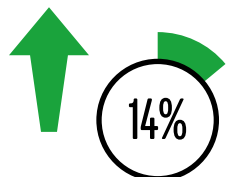
### SALT NEUTRALIZING AND ROOT GROWTH

2-10 cm plugs were removed from each treated plot and these were transplanted in plastic containers and were irrigated 3 times per week for 6 weeks with a 2% saline (salt) solution. The grass irrigated with 2% saline water and treated with Biofeed® produced 15% more roots than the control.



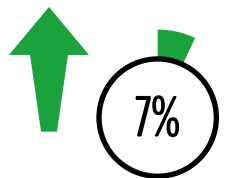
### ROOT GROWTH UNDER DROUGHT CONDITIONS

Root mass dry weight increased by up to 42% when the Bentgrass areas were treated every 2 weeks at a rate of 4-8 ounces per 1000 sq. ft. of Biofeed®. Control areas exhibited less than 5%-8% increase in root growth during the same test periods.



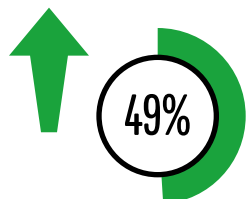
### PHOTOSYNTHETIC CAPACITY

Turf treated with Biofeed® showed an average increase of 14% greater photosynthetic capacity than the control plots. This measurement accurately determines the rate of conversion of light into usable energy.




### CHLOROPHYLL CAPACITY

During photosynthesis, tiny plant cells combine sunlight, water, and minerals, and convert it into chlorophyll. Throughout the tests, the Biofeed® treated Bentgrass had 7.0% higher chlorophyll content compared to the side-by-side control areas. Even minute increases in chlorophyll content result in improved stress tolerance.



### SUPEROXIDE DISMUTASE (S.O.D.)

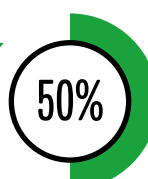

S.O.D. has been shown to control free radicals within green leafy plants, reducing environmental stress. Its production is relevant to chlorophyll production. However the Biofeed® treated Bentgrass in this study measured over 49% higher S.O.D. content as compared to the control plots.



The University of California Riverside began a comparison study to evaluate the performance of Biofeed® soil conditioning fertilizers when applied to tall fescue for one year, in terms of visual quality ratings, clipping yields, clipping elemental analysis and root mass density.



The chemical fertilizers used in this study were TriKote, Turf Supreme, Par EX IBDU, and Nitra King. These are products commonly used on turf grass and are comparable to Scotts Fertilizer.

This study was conducted to determine if alternate fertilizer products that are designed to supply nutrients, biostimulants and humic substances can perform as well as nationally advertised synthetic brands. The nutrients contained in Biofeed are highly complexed with long-chain carbon molecules to reduce nutrient loss due to leaching and tie-up within the soil matrix. Upon entering the soil, Biofeed fertilizers undergo biological transformation, which converts the applied nutrients into nutrient rich microbial residues that become the preferred food source for vigorous plant growth.





**VISUAL RATINGS – NITROGEN USAGE**

Visual ratings were comparable and Biofeed treated turf grass performed similar to the chemically fertilized turf. While all fertilized turf areas performed substantially better than the check, Biofeed treated areas received 50% LESS of the applied rate of nitrogen each month compared to the yearly rates of nitrogen for all other tested turf areas.





**CLIPPING YIELDS ANALYSIS**

The Biofeed fertilized turf produced 13% LESS clippings on an annual basis than the chemically fertilized turf during the 12-month study.



**ROOT MASS DENSITY**

Samples were taken twice during the one-year study period. Overall, Biofeed fertilized turf averaged 5% greater Root Mass Density than the conventional fertilized turf areas.



**NUTRIENT DENSITY**

Tissue samples revealed that the Biofeed fertilized turf contained 40% higher levels of primary secondary and trace nutrients compared to the control and the chemically fertilized turf areas. Researchers stated that this data suggests that the Biofeed treatments allowed the plant tissue to absorb significantly greater amounts of N, P, S, Ca, Mg, Zn, Mn, Fe, and Mo.

Source document located at: [https://biofeed.com/wp-content/uploads/2021/10/UC\\_RiversideStudy\\_Report.pdf](https://biofeed.com/wp-content/uploads/2021/10/UC_RiversideStudy_Report.pdf)



## WATER CONSERVATION

Biofeed® products contain natural agents which neutralize and combine with harmful salt to make it less toxic. The salt toxicity reduces as it becomes easier for salt to leach away from the root-zone. The removal of excess salt loosens the soil structure to allow better movement of water. Better soil structure reduces water usage in several ways while also creating vigorous, more beautiful turf. Using Biofeed fertilizers helps your water penetrate to the roots in your soil, helping you conserve water, and cut watering costs by 20% to 30%!

- Reduce water pooling and runoff. Either of these is a sign your soil is not absorbing water as it should. Irrigation water that does not penetrate the soil surface is wasted.
- Increase water holding capacity. The deeper water penetrates the less likely it will evaporate away. More efficient soil water holding capacity reduces how much and how often you irrigate.
- Root Length and Root Density. Water is taken into plants through the leaves and roots. A loosened soil crumb structure allows for deeper root growth in addition to increased root density. This means the roots have more surface area through which to absorb water. Less water is needed as it becomes easier for the plant to acquire the water it needs.

## POWERFUL AND ECO-FRIENDLY

And if the dramatic results and increased turf quality are not enough, Biofeed® products are eco-friendly. We do not ADD any of the following harmful ingredients to our products:

- Harmful residues that accumulate and suppress soil fertility
- EDTA (Ethylenediaminetetraacetic)
- Mined humic compounds (Leonardite)
- Chemically derived additives
- Petroleum hydrocarbons
- Toxic elements
- Fulvic acid
- Sulfuric acid

## SUPPORTS CARBON SEQUESTRATION

Biofeed® is proud to be doing our part for the climate by creating eco-friendly products that nourish and support the various soil microbial systems to multiply and function optimally, creating a live soil environment that not only is proven to produce thriving turf but also creating better conditions for soil to absorb carbon dioxide out of the atmosphere to be properly stored and used below ground where nature intended.



## Biofeed® Products promote **GREEN** turf grass by:

- *Increasing turf growth, quality, and color*
- *Improving soil crumb structure*
- *Reducing water usage by improved absorption*
- *Helping roots reach deeper lengths*
- *Neutralizing and dissolving salts in soils and irrigation water*
- *Reducing mineral scale from irrigation lines*
- *Releasing tied-up essential plant nutrients*
- *Promoting aerobic soil microbial activity*

## PACKAGING



Biofeed® products are available in 2.5-Gallon Jugs (2 per case), 5-Gallon Pails, 30-Gallon Drums, 55-Gallon Drums, and 275-Gallon Bulk Totes.

**CONTACT US TODAY!**

**CALL +1 (623) 930-7510**

**CONTACT@BIOFEED.COM**

**MADE IN THE  
USA**



**Biofeed®**

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