



**GRIGG**<sup>TM</sup>

Research Driven,  
Proven Results<sup>TM</sup>



**SPECIALTY  
FERTILIZERS  
FOR GOLF AND  
SPORTS TURF**



# RESEARCH DRIVEN, PROVEN RESULTS™

**For over 20 years, GRIGG™ has been leading turf nutrition product development, research and innovation.**

GRIGG's high quality, science-based turf nutrition products are backed by years of research and field testing, and our customers are supported by a team of seasoned agronomists and turfgrass professionals.

These are the reasons GRIGG products are used and trusted by some of the most notable golf courses and sports stadiums in the world.



# TABLE OF CONTENTS

## PROVEN FOLIAR® Nutrients . . . . . 3

GRIGG™ Amino Iron® 12-0-0 + 5% Fe + Mn and Zn . . . . .	4
GRIGG™ Aminoplex® 3-0-0 . . . . .	5
GRIGG™ A-O-K® 1-0-24 . . . . .	6
GRIGG™ Carboplex® 6-4-4 + Micros . . . . .	7
GRIGG™ Elicitor® 1-2-4 . . . . .	8
GRIGG™ Fairphyte® 1-0-26 + 26% Phosphite . . . . .	9
GRIGG™ Gary's Green® 18-3-4 + Fe + Micros . . . . .	10
GRIGG™ Gary's Green Ultra® 13-2-3 + Fe + Micros . . . . .	11
GRIGG™ Iron Chelate 4.7% . . . . .	12
GRIGG™ Iron Combo Chelate 1-0-2 + 4.0% Fe . . . . .	13
GRIGG™ Kelplex™ 1-2-2 . . . . .	14
GRIGG™ Magnesium Chelate 5% . . . . .	15
GRIGG™ Manganese Combo . . . . .	16
GRIGG™ Micro Burst™ 0-0-1 + Micros . . . . .	17
GRIGG™ Nutra Green™ 5-10-5 + Fe + Micros. . . . .	18
GRIGG™ P-K Plus® 3-7-18 + 14% Phosphite. . . . .	19
GRIGG™ Sili-Kal-B™ 8-0-4 + 10% Ca + Si + B . . . . .	20
GRIGG™ Suprema® 12-0-12 + Micros . . . . .	21
GRIGG™ Tuff Turf® 1-0-14 + Si + Micros. . . . .	22
GRIGG™ Ultraplex® 4-0-3 + 2% Fe + Micros . . . . .	23
GRIGG™ Zinc 5% . . . . .	24

## GREENSPEC® Granular Nutrients . 25

GRIGG™ All Natural Organic 10-2-4 . . . . .	26
GRIGG™ Endurance™ 8-4-16. . . . .	27
GRIGG™ Seven Iron™ 7-7-7 . . . . .	28
GRIGG™ Turf Rally™ 16-4-8 . . . . .	29
GRIGG™ Zerophos® 7-0-14. . . . .	30

## Soil Amendments . . . . . 31

GRIGG™ C K-Balance™ 0-0-24 . . . . .	32
GRIGG™ S K-Balance™ 0-0-24 . . . . .	33
GRIGG™ Rhizo Aide™ 1-1-0. . . . .	34
GRIGG™ Z-mendit™ . . . . .	35

## Specialty Soil Fertilizers . . . . . 36

GRIGG™ Bio Blend™ 10-0-0 + 5% Ca . . . . .	37
GRIGG™ Burley Green® 18-2-3. . . . .	38
GRIGG™ Displace® 12% Ca . . . . .	39
GRIGG™ Rhizonify™ 6-4-4. . . . .	40

## Colorants . . . . . 41-42

GRIGG™ GreenPIG™ . . . . .	43
GRIGG™ GreenPIG™ Ultra . . . . .	44
GRIGG™ GreenPIG™-UV . . . . .	45
GRIGG™ Markit Blue™ . . . . .	46
GRIGG™ Spaint® . . . . .	47

## Foliar Analysis Summary . . . . . 48-49

## Nutrition Programs . . . . . 50-63



# ABOUT GRIGG™

GRIGG™ was founded by brothers, Mark and Gary Grigg. Before forming GRIGG, Mark Grigg spent years as a business owner and entrepreneur, and Gary Grigg spent over 30 years in golf course development and construction, turf grow-in and management. In 1995, they came together to develop and launch the GRIGG™ line of specialty nutrition products specifically designed for turfgrass.

Mark Grigg served as President of GRIGG, overseeing sales and operations. While Gary Grigg led the company's turf research, product development and agronomic practices. Gary holds a B.S. degree in Agriculture and Entomology from Utah State University and an M.S. degree in Agronomy from Michigan State University.

The company's focus is to provide customers with the highest quality turf nutrition products and agronomic support in the industry, backed by plant nutrition science and research. GRIGG's high performance, high quality line of fertilizers provide exceptional nutrient uptake ability on turfgrass and the brand has become known as the premier specialty nutrition product line for turf.

GRIGG products are sold through licensed distributors throughout the U.S., Canada, Europe, Asia, Australia and New Zealand.

In 2014, GRIGG was purchased by Brandt Consolidated, Inc. BRANDT® is a leading manufacturer and distributor of premium fertilizers, bio-pesticides and adjuvant technologies for the ag, turf and ornamental market, and lawn and garden markets. The company boasts a wide range nutrient efficiency enhancement products and one of the largest portfolios of OMRI Listed products available on the market. BRANDT has four manufacturing facilities in the U.S. and manufacturing plants in Brazil, Spain and Australia; as well as numerous warehouse locations.

## VISION

- To bring new technologies to the turf industry that are backed by research and have proven results.
- Let nutrition science and environmental awareness drive all fertility and IPM agronomic solutions, product recommendations and programs.
- Educate and provide science-based tools and technologies.
- Lead the turf nutrition industry in independent agronomic research, with an emphasis on field testing that supports the development of new, high quality products.



GRIGG™

# PROVEN FOLIAR® NUTRIENTS

## Nutrition That Performs

### Why Foliar Feed Turfgrass?

- Optimum nutrient use efficiency for overall reduced nutrient inputs.
- Better results in unfavorable root-zone conditions.
- Better results without optimum soil pH.
- Recovery from stress.
- Improved response when soil temperatures are cool.
- Optimal control over growth.
- Bypasses the problem of nutrient soil fixation.
- May improve the performance of pesticides.
- Minimizes the potential for nutrient leaching.
- Nutrient use efficiency means economic efficiency.

### Why Foliar Feed with GRIGG™ Proven Foliar® Nutrients?

- Highly compatible with other turf management products.
- Highly efficient foliar absorption.
- Easy to use.
- Predictable results.
- No burn risk when used as directed.
- Quick response.
- Improved uptake and translocation.
- Environmental soundness.
- Extensive research and testing by leading university professionals.

### What Makes GRIGG Proven Foliar Nutrients Perform?

- GRIGG Proven Foliar products contain natural plant and micro-organism based organic compounds, organic facilitators, that chelate and/or complex nutrients.
- Nutrients are in the proper ionic form for optimal plant utilization.
- Organic facilitators assist in the vascular transport of all nutrients and keep them mobile and available for assimilation.
- Natural chelates have high stability constants that permit micronutrients including iron, copper and calcium to be mixed with macronutrients (N, P, K) plus magnesium and sulfur.
- A specific nitrogenous base that enhances absorption through the waxy cuticle of a leaf surface.
- Products may also be applied to the soil, mixed with irrigation water. The natural compounds contained in GRIGG products enhance soil bacteria and may improve soil conditions; however, they are most effective when foliar applied to plants.

GRIGG™

# AMINO IRON®

12-0-0 + 5% Fe + Mn and Zn

GRIGG™ Amino Iron® is a GRIGG™ Proven Foliar® nutrition product formulated with amino acid. It is specifically designed for golf course fairways and sports field applications.

## Amino Iron Advantages

- Cost effective for fairway application.
- Highly efficient.
- Low burn potential.
- Correctly complexed micronutrients.
- Recommended for foliar application or fertigation.
- Compatible with GRIGG chelated micronutrients, biostimulants and surfactants.
- Contains plant based amino acids and natural acids.

## Application and Use

For additional micronutrients add GRIGG™ Ultraplex®, GRIGG™ Micro Burst™, or GRIGG™ Iron Combo Chelate to any GRIGG foliar application at the rate of 2-3 fl oz per 1000 sq ft. Ultraplex is a unique formula, no additional surfactant required.

### Turfgrass:

As a foliar apply at the rate of 3-12 fl oz per 1000 sq ft (10-40 L/Ha) every 14 days or 8-12 fl oz per 1000 sq ft (25-40 L/Ha) every 30 days as needed.

## Guaranteed Analysis

Total Nitrogen . . . . .	12.0%
12.0% Urea Nitrogen	
Water Soluble Iron (Fe) . . . . .	5.0%
Manganese (Mn) . . . . .	0.5%
Zinc (Zn) . . . . .	0.5%

Derived from urea, iron sulfate, manganese sulfate, zinc sulfate.  
Additional Contents: complexed amino and natural acids.



1 U.S. Gallon, Net Weight 10.77 lbs/3.78 Liters/4.88 kg  
Specific Gravity: 1.29, pH 2.5

# GRIGG™ AMINOPLEX®

## 3-0-0

GRIGG™ Aminoplex® is a proprietary liquid foliar mixture of 15 plant based L-amino/organic acids and fermentation products known to encourage plant growth and health, especially at times of stress. Aminoplex can enhance the performance of nonselective herbicides, as well as liquid and soluble fertilizers.

### Aminoplex Advantages

- Aminoplex stimulates plant growth, improves uptake of nutrient and chemical compounds, and buffers water.
- Provides energy source for, and components to, enhance microbial growth and propagation which improves soil conditions - thereby mineralizing nutrients for plant use.
- Aids in the recovery from heat, shade, or root decline by stimulating plant metabolism.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

Apply 1-3 fl oz per 1000 sq ft (3-10 L/Ha). Repeat application every 7-14 days or as needed.

### Guaranteed Analysis

Total Nitrogen (N) .....	3.0%
Fermentation Products .....	45.0%
Natural Plant and Organic Extracts .....	21.0%
Inert Material .....	31.0%

Derived from urea.

Additional contents: proprietary plant extract, and liquid fermentation products containing enzyme precursors, microbial metabolites, plant hormones, organic and amino acids, glycosides and enzyme stimulants.



1 U.S. Gallon, Net Weight: 10.52 lbs/3.78 Liters/4.77 kg  
Specific Gravity: 1.26, pH: 2.0

# GRIGG™ A-O-K®

## 1-0-24

GRIGG™ A-O-K® is designed to be foliar applied and completely foliar absorbed while it is drying on the target plant.

### A-O-K Advantages

- A-O-K has a positive influence on turfgrass by promoting carbohydrate storage, stolon and rhizome growth, heat, cold, and wear tolerance, while increasing the cell strength and improving salinity stress tolerance.
- Regulates the absorption and retention of water by turfgrass plants.
- Potassium is easily leached from the soil especially in sandy soils. Foliar feeding maximizes (K) absorption and utilization.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

Apply 3-8 fl oz per 1000 sq ft (10-20 L/Ha). Repeat as needed.

### Guaranteed Analysis

Total Nitrogen (N) .....	1.0%
1.0% Urea Nitrogen	
Soluble Potash (K <sub>2</sub> O) .....	24.0%

Derived from urea, potassium.  
Additional contents: organic and amino acids.



1 U.S. Gallon, Net Weight: 10.52 lbs/3.78 Liters/4.77 kg  
Specific Gravity 1.26, pH: 7.6



# GRIGG™ CARBOPLEX®

## 6-4-4 + Micros

GRIGG™ Carboplex® is a unique product that can be used as a foliar fertilizer or watered into the root zone as a carbon based liquid fertilizer.

### Carboplex Advantages

- Contains nitrogen, phosphorus, potassium, micronutrients and other ingredients for improved plant health, soil structure, resident microbial substrates and nutrient uptake to promote increased metabolism and growth.
- Contains non-fertilizer properties including: fulvic acid, humic acid, glucoheptonates, sea plant extracts, plant sugars, amino acids and organic acids.
- Contains a balanced micronutrient package.
- The non-plant food ingredients in Carboplex are readily translocated to metabolic sites in the plant and utilized for growth or stored as reserves.
- Under many stress conditions where carbohydrate supplies are limited, a foliar application of the soluble carbohydrates in Carboplex may be beneficial and allow for continued growth.
- Carboplex watered into the turf can be utilized by resident microorganisms.
- Can be applied with soil stimulator, GRIGG™ Bio Blend™, for optimum soil and resident microbial stimulation and should be applied at a rate of 1 gallon Bio Blend to 4 gallons of Carboplex per acre (45 L/Ha) every 15-30 days.
- A valuable tool for winter preparation.

### Application and Use

#### Foliar Applications:

On greens and tees, apply 6-9 fl oz per 1000 sq ft (20-30 L/Ha) every 14 days. On fairways and sports fields, apply 9-12 fl oz per 1000 sq ft (30-40 L/Ha) every 14-21 days.

#### Soil Applications:

As a carbon based liquid fertilizer and soil drench apply 12-15 fl oz per 1000 sq ft (40-50 L/Ha) with light irrigation, every 14 days or as needed.

### Guaranteed Analysis

Total Nitrogen (N) .....	6.0%
0.76% Ammoniacal Nitrogen	
1.24% Nitrate Nitrogen	
4.0% Urea Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	4.0%
Soluble Potash (K <sub>2</sub> O) .....	4.0%
Chelated Iron (Fe) .....	0.2%
Chelated Manganese (Mn) .....	0.05%
Chelated Zinc (Zn) .....	0.05%

Derived from urea, ammonium nitrate, potassium nitrate, phosphoric acid, potassium phosphate, iron, zinc, and manganese glucoheptonates.



1 U.S. Gallon, Net Weight: 10.85 lbs/3.78 Liters/4.92 kg  
Specific Gravity: 1.3, pH: 2.8

# GRIGG™ ELICITOR®

## 1-2-4

GRIGG™ Elicitor® is a GRIGG™ Proven Foliar® nutrition product that contains elicitors, which can help induce plant defense response. These elicitors may be derived from biological and chemical compounds. Research has shown elicitors can help maintain a healthy plant in heat, cold, saline, or other types of environmental stresses or disease.

### Elicitor Advantages

- Elicitor contains various molecules both biotic and abiotic such as silicon, molybdenum, cobalt, zinc, kelp, yucca, NBE (natural biological extracts) and others which are known elicitors.
- Organic acids and amino acids are present to help in the absorption and translocation of nutrients.
- Potassium is present to maintain stomatal control and assist in foliar uptake.
- Chelated micronutrients enhance foliar and root uptake.
- Elicitors trigger mechanisms within the plant to resist stresses such as disease, heat, cold, salinity, etc.
- Elicitors signal plants to form phytoalexins (low molecular weight compounds that offer plant resistance).
- Elicitor may be applied as a foliar or through root absorption.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

Apply 1-4 fl oz. per 1000 ft<sup>2</sup> (6-15 L/Ha). Repeat as needed.

### Guaranteed Analysis

Total Nitrogen (N) .....	1.0%
0.3% Ammoniacal Nitrogen	
0.7% Urea Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	2.0%
Soluble Potash (K <sub>2</sub> O) .....	4.0%
Cobalt (Co) .....	0.002%
Copper (Cu) .....	0.05%
Iron (Fe) .....	0.10%
Manganese (Mn) .....	0.05%
Molybdenum (Mo) .....	0.004%
Zinc (Zn) .....	0.05%
Nickel (Ni) .....	0.01%
Silicon (Si) .....	0.01%

Derived from urea, ammonium phosphate, potassium, phosphate, cobalt sulfate, iron sulfate, manganese sulfate, molybdenum sulfate, zinc sulfate, nickel sulfate and silicate.

Chelated with glucoheptonates.



1 U.S. Gallon, Net Weight: 11.35 lbs/3.78 Liters/5.15 kg  
Specific Gravity 1.36, pH: 2.8

GRIGG™

# FAIRPHYTE®

## 1-0-26 + 26% Phosphite

GRIGG™ Fairphyte® is an amino acid based GRIGG™ Proven Foliar® nutrition product specifically designed for golf course fairways and sports field applications.

### Fairphyte Advantages

- Cost effective for fairway application.
- Highly efficient.
- Low burn potential.
- Correctly complexed micronutrients.
- Recommended for foliar application or fertigation.
- Compatible with GRIGG chelated micronutrients, biostimulants and surfactants.
- Contains plant based amino acids and natural acids.

### Application and Use

For additional micronutrients add GRIGG™ Ultraplex®, GRIGG™ Micro Burst™, or GRIGG™ Iron Combo Chelate to any GRIGG foliar application at the rate of 2-3 fl oz per 1000 sq ft. Ultraplex is a unique formula, no additional surfactant required.

#### Turfgrass:

As a foliar apply at the rate of 3-4 fl oz per 1000 sq ft (10-15 L/Ha) every 14 days or 6-8 fl oz per 1000 sq ft (20-25 L/Ha) every 30 days as needed.

### Guaranteed Analysis

Total Nitrogen . . . . .	1.0%
1.0% Urea Nitrogen	
Soluble Potash(K <sub>2</sub> O) . . . . .	26.0%

Derived from urea, potassium phosphite (includes 26% phosphite (H<sub>3</sub>PO<sub>3</sub>)).



1 U.S. Gallon, Net Weight 12.35 lbs/3.78 Liters/5.60 kg  
Specific Gravity: 1.48, pH 6.7

# GRIGG™ GARY'S GREEN®

## 18-3-4 + Fe + Micros

GRIGG™ Gary's Green® is a GRIGG™ Proven Foliar® nutrient product that is designed to provide an efficient form of foliar absorbed nitrogen, phosphorous, potassium and micronutrients. It helps promote consistent turfgrass growth, recovery and vigor at golf and sports turf sites.

### Gary's Green Advantages

- Formulated to provide efficient nitrogen utilization for consistency, recovery and green speed management.
- Green-up without rapid growth.
- Optimizes turf density and color.
- Widely used in foliar fertilizer programs.

### Application and Use

#### Turfgrass:

As a foliar maintenance rate apply 4-8 fl oz per 1000 sq ft (15 - 30 L/Ha). To correct nutrient deficiencies, apply 8-12 fl oz per 1000 sq ft (15-30 L/Ha) every 7-14 days as needed.

#### Guaranteed Analysis

Total Nitrogen (N) .....	18.0%
2.0% Ammoniacal Nitrogen	
1.5% Nitrate Nitrogen	
14.5% Urea Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	3.0%
Soluble Potash (K <sub>2</sub> O) .....	4.0%
Chelated Magnesium (Mg) .....	0.5%
Chelated Copper (Cu) .....	0.12%
Chelated Iron (Fe) .....	1.0%
Chelated Manganese (Mn) .....	0.1%
Chelated Zinc (Zn) .....	0.1%

Derived from urea, ammonium phosphate, potassium phosphate, potassium nitrate, iron, copper, manganese and zinc glucoheptonates, magnesium sulfate.



1 U.S. Gallon, Net Weight: 10.85 lbs/3.78 Liters/4.92 kg  
Specific Gravity 1.30, pH: 2.9

GRIGG™

# GARY'S GREEN ULTRA®

## 13-2-3 + Fe + Micros

GRIGG™ Gary's Green Ultra® is a sophisticated formulation in the GRIGG™ Proven Foliar® product line and is a combination of GRIGG™ Gary's Green® and GRIGG™ Ultraplex®. It is designed for use in all seasons and is an important component to most GRIGG foliar programs for improved plant health and stress tolerance.

### Gary's Green Ultra Advantages

- Contains N, P, and K (Also available in a no phosphate version).
- Contains organically chelated phosphate and a micronutrient package including Mg, Cu, Fe, Mn, and Zn.
- Formulated with sea plant extract (*Ascophyllum Nodosum*).
- Includes a natural, non-ionic and organic surfactant for improved foliar coverage and absorption.
- Effective natural bio stimulants, organic and amino acids.
- Contains a buffering agent designed to resist large changes in spray tank pH.
- Quick visual response.
- May be used with plant growth regulator programs for better color and improved uptake.

### Application and Use

For general foliar application guidelines please refer to page 50. Gary's Green Ultra is a unique formula in which no additional surfactants are required for application.

#### Turfgrass:

As a foliar maintenance rate 6-12 fl oz per 1000 sq ft (20-40 L/Ha). Severe deficiency rate 9-14 fl oz per 1000 sq ft (30-40 L/Ha) every 7-14 days or as needed.

### Guaranteed Analysis

Total Nitrogen (N) .....	13.0%
1.3% Ammoniacal Nitrogen	
1.2% Nitrate Nitrogen	
10.5% Urea Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	2.0%
Soluble Potash (K <sub>2</sub> O) .....	3.0%
Chelated Magnesium (Mg) .....	0.5%
Chelated Copper (Cu) .....	0.12%
Chelated Iron (Fe) .....	1.4%
Chelated Manganese (Mn) .....	0.2%
Chelated Zinc (Zn) .....	0.2%

Derived from urea, ammonium phosphate, potassium phosphate, potassium nitrate, magnesium sulfate, iron, copper, manganese, zinc glucoheptonates and kelp.



1 U.S. Gallon, Net Weight: 10.68 lbs/3.78 Liters/5.18 kg  
Specific Gravity: 1.28, pH: 3.7

# GRIGG™ IRON CHELATE 4.7%

## Foliar Chelate

GRIGG™ Iron Chelate 4.7% is an organic chelate that is biodegradable and has a high stability constant.

It is part of the GRIGG™ Proven Foliar® nutrient product line, which is designed for foliar application and complete foliar absorption while drying on the target plant.

### Iron Chelate 4.7% Advantages

- Iron is a component of many enzymes, and is required for chlorophyll formation, nitrogen fixation, and nitrate reduction.
- Micronutrients are a foliar absorbed source that will boost nutrient levels in any program.

### Application and Use

For general foliar application guidelines please refer to page 50. Apply 1-6 fl oz per 1000 sq ft (3-20 L/Ha). Repeat as needed.

#### Turfgrass:

With severe deficiency use the highest rate of application.

### Guaranteed Analysis

Iron (Fe) . . . . . 4.7%  
4.7% Chelated Iron

Derived from iron glucoheptonate.



1 U.S. Gallon, Net Weight: 10.85 lbs/3.78 Liters/4.92 kg  
Specific Gravity: 1.3, pH 2.7

GRIGG™

# IRON COMBO CHELATE

1-0-2 + 4.5% Iron

GRIGG™ Iron Combo Chelate is an organic chelate that is biodegradable and has a high stability constant.

It is part of the GRIGG™ Proven Foliar® nutrient product line, which is designed for foliar application and complete foliar absorption while drying on the target plant.

## Iron Combo Chelate Advantages

- Organically chelated micronutrient package.
- Compatible in most solutions containing phosphate.
- Nutrients are quickly absorbed for a fast response.
- Iron is a component of many enzymes, and is required for chlorophyll formation, nitrogen fixation, and nitrate reduction.

## Application and Use

For general foliar application guidelines please refer to page 50.

### Turfgrass:

Use 2-6 fl oz per 1000 sq ft (6-20 L/Ha) in combination with other GRIGG products. Use 6 fl oz per 1000 sq ft (20 L/Ha) rate when applied every 7-14 days as a stand alone product.

### Guaranteed Analysis

Total Nitrogen (N) .....	1.0%
1.0% Urea Nitrogen	
Soluble Potash (K <sub>2</sub> O) .....	2.0%
Combined Sulfur(S) .....	1.0%
Boron (B) .....	0.16%
Chelated Copper (Cu) .....	0.13%
Chelated Iron (Fe) .....	4.5%
Chelated Manganese (Mn) .....	1.0%
Chelated Zinc (Zn) .....	1.0%

Derived from urea, potassium sulfate, boric acid, iron, zinc, manganese and copper glucoheptonates.



1 U.S. Gallon, Net Weight: 11.93 lbs/3.78 Liters/5.41 kg  
Specific Gravity 1.43, pH: 2.7

# GRIGG™ KELPLEX™

## 1-2-2

GRIGG™ Kelplex™ contains seaweed extract (*Ascophyllum nodosum*) in a foliar form and is an excellent component of a summer stress management program.

### Kelplex Advantages

- Foliar seaweed extract (*Ascophyllum nodosum*).
- Contains enzymatic and non-enzymatic antioxidants, limiting oxidative stress.
- Supplement to existing foliar and granular fertilizer program.
- Improves heat, drought, salinity stress tolerance.
- Maximizes seashore paspalum (*Paspalum vaginatum*) recovery from mechanical and environmental stress.
- Increase primary plant metabolism including photosynthesis.
- Protects cellular membranes.
- Encourages efficient and healthy turfgrass physiology.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

Apply 1-2 fl oz per 1000 sq ft (3-6 L/Ha) sequentially every 14 days prior to the onset of stress.

### Guaranteed Analysis

Total Nitrogen (N) .....	1.0%
0.32% Ammoniacal Nitrogen	
0.68% Urea Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	2.0%
Soluble Potash (K <sub>2</sub> O) .....	2.0%

Derived from phosphoric acid, ammonium phosphate, urea.

Additional contents: *ascophyllum nodosum*, plant growth regulators, organic and amino acids.



1 U.S. Gallon, Net Weight: 9.18 lbs/3.78 Liters/4.16 kg  
Specific Gravity 1.1, pH: 4.5



GRIGG™

# MAGNESIUM CHELATE 5%

## Foliar Chelate

GRIGG™ Magnesium Chelate 5% is an organic chelate that is biodegradable and has a high stability constant.

It is part of the GRIGG™ Proven Foliar® nutrient product line, which is designed for foliar application and complete foliar absorption while drying on the target plant.

### Magnesium Chelate 5% Advantages

- Foliar absorbed nutrient source that will boost micronutrient levels in any program where extra micronutrients are needed.
- Magnesium is required by plants for the formation of chlorophyll, enzymatic activities, and many other metabolic roles. It is also required for photosynthesis, nitrogen fixation, and nitrate reduction.

### Application and Use

For general foliar application guidelines please refer to page 50. Apply 1-6 fl oz per 1000 sq ft (3-20 L/Ha). Repeat as needed.

**Turfgrass:**

With severe deficiency use the highest rate of application.

### Guaranteed Analysis

Magnesium (Mg) ..... 5.0%  
5.0% Chelated Magnesium

Derived from magnesium glucoheptonate.



1 US Gallon Net Weight 10.27 lbs/3.78 Liters/ 4.67 kg  
Specific Gravity: 1.23, pH 0.60

GRIGG™

# MANGANESE COMBO

## Foliar Chelate

GRIGG™ Manganese Combo is an organic chelate that is biodegradable and has a high stability constant.

### Manganese Combo Advantages

- Organically chelated micronutrient package.
- Compatible in most solutions containing phosphate.
- The nutrients are quickly absorbed for a fast response.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

Use 2-6 fl oz per 1000 sq ft (6-20 L/Ha) in combination with other GRIGG products. Use 6 fl oz per 1000 sq ft (20 L/Ha) rate when applied every 7-14 days as a stand alone product.

### Guaranteed Analysis

Chelated Magnesium (Mg) .....	1.2%
Chelated Copper (Cu) .....	0.4%
Chelated Manganese (Mn) .....	5.0%
Chelated Zinc (Zn) .....	1.0%

Derived from magnesium, manganese, copper and zinc glucoheptonates.



1 U.S. Gallon, Net Weight 11.27 lbs/3.78 Liters/5.11 kg  
Specific Gravity 1.35, pH 2.38

# GRIGG™ MICRO BURST™

## 0-0-1 + Micros

GRIGG™ Micro Burst™ is an excellent micronutrient package that promotes optimal turfgrass color and performance. Recent GRIGG research has documented the use of Micro Burst as an effective tool to manage plant injury from PGR's and herbicides. This product is an excellent addition to any GRIGG program for better color, performance and consistency.

### Micro Burst Advantages

- Contains magnesium to maximize photosynthetic capacity.
- Contains 6 micronutrients plus potassium.
- Excellent supplement for turf growing in soil with high pH.
- Enhances turf color.
- Stimulates chlorophyll production.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

Apply 2-6 fl oz per 1000 sq ft (6-20 L/Ha). Repeat as needed.

### Guaranteed Analysis

Soluble Potash (K <sub>2</sub> O)	1.0%
Chelated Magnesium (Mg)	0.3%
Boron (B)	0.04%
Chelated Copper (Cu)	0.05%
Chelated Iron (Fe)	3.4%
Chelated Manganese (Mn)	2.4%
Molybdenum (Mo)	0.01%
Chelated Zinc (Zn)	2.5%

Derived from potassium sulfate, boric acid, magnesium, copper, iron, zinc, manganese, and molybdenum sulphates.



1 U.S. Gallon, Net Weight: 11.10 lbs/3.78 Liters/5.03 kg  
Specific Gravity 1.33, pH: 2.0

# GRIGG™ NUTRA GREEN™

## 5-10-5 + Fe + Micros

GRIGG™ Nutra Green™ is an extremely versatile product for turf, ornamentals, shrubs, root injection, overseeding and aeration. It is an excellent tool for spring green up.

### Nutra Green Advantages

- Green up without rapid growth.
- Quick visual response.
- Excellent on sand root zones often low in exchangeable phosphorus and fine textured soils where phosphorus is complexed with clay minerals and/or calcium (Ca).
- Nutra Green is a versatile product that can be used on turfgrass, ornamentals and shrubs at the recommended rate for a complete nutrient source.
- Excellent product for turfgrass establishment and interseeding.
- 9 nutrients, 1 product.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

As a foliar maintenance rate 4-9 fl oz per 1000 sq ft (10-30 L/Ha). Deficiency rate 6-12 fl oz per 1000 sq ft (20-40 L/Ha) every 7-14 days as needed.

#### Trees, Shrubs, and Flowers:

250X dilution (1/2 fl oz/gallon).

#### Soil Applications:

Greenhouse, Home and Garden Use.

### Guaranteed Analysis

Total Nitrogen (N) .....	5.0%
2.7% Ammoniacal Nitrogen	
0.8% Nitrate Nitrogen	
1.5% Urea Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	10.0%
Soluble Potash (K <sub>2</sub> O) .....	5.0%
Chelated Magnesium (Mg) .....	1.0%
Boron (B) .....	0.12%
Chelated Copper (Cu) .....	0.1%
Chelated Iron (Fe) .....	1.0%
Chelated Manganese (Mn) .....	0.5%
Chelated Zinc (Zn) .....	0.1%

Derived from urea, ammonium phosphate, potassium phosphate, potassium nitrate, boric acid, magnesium, iron, copper, manganese and zinc glucoheptonates.



1 U.S. Gallon, Net Weight: 11.35 lbs/3.78 Liters/5.15 kg  
Specific Gravity: 1.36, pH: 2.8

# GRIGG™ P-K PLUS®

## 3-7-18 + 14% phosphite

GRIGG™ P-K Plus® provides phosphite, derived from potassium phosphite ( $K_2HPO_3$ ) for plant health and phosphate for increased energy transfer and root development. It also provides potassium for cell strength and rigidity.

### P-K Plus Advantages

- Contains 7% phosphate ( $H_2PO_4$ ) and 14% phosphite ( $H_3PO_3$ ).
- Easily absorbed and translocated.
- Independent and University tested since 2000.
- Potassium phosphite for improved plant health including increased antioxidant and phytoalexin production.
- Enhances plant health and resistance to abiotic stress.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

As a foliar maintenance rate 6 fl oz per 1000 sq ft (20 L/Ha) every 14 days.

### Guaranteed Analysis

Total Nitrogen (N) .....	3.0%
0.9% Ammoniacal Nitrogen	
2.1% Urea Nitrogen	
Available Phosphoric Acid ( $P_2O_5$ ) .....	7.0%
Phosphite ( $H_3PO_3$ ) .....	14.0%
Soluble Potash ( $K_2O$ ) .....	18.0%
Boron (B) .....	0.02%
Cobalt (Co) .....	0.01%
Molybdenum (Mo) .....	0.001%

Derived from urea, ammonium sulfate, ammonium phosphate, potassium phosphite, boric acid, cobalt sulfate, and molybdenum sulfate.



1 U.S. Gallon, Net Weight: 11.43 lbs/3.78 Liters/5.19 kg  
Specific Gravity 1.37, pH: 7.05

GRIGG™

# SILI-KAL B™

8-0-4 + 10% Ca + Si + B

GRIGG™ Sili-Kal B™ is a high calcium product combined with nitrogen and potassium for increased plant strength, heat tolerance, and turf rigidity.

## Sili-Kal B Advantages

- A unique combination product that includes calcium, boron, silicon, potassium and nitrogen.
- Contains proprietary organic facilitators, formulated to keep calcium in solution and plant available.
- Calcium is important for strong cell walls, abiotic stress tolerance, and biotic pest resistance.
- Calcium is relatively immobile once absorbed by plants, therefore foliar calcium applications ensure adequate concentrations in emerging leaf tissue.
- Sand root zones can be low in plant available calcium. Properly chelated and foliar absorbed calcium is an effective method of increasing calcium tissue content.

## Application and Use

For general foliar application guidelines please refer to page 50.

Sili-Kal B is compatible with GRIGG phosphates.

With severe deficiency use the highest application rate.

### Turfgrass:

Apply 3-7 fl oz per 1000 sq ft (10-20 L/Ha). Repeat as needed.

### Guaranteed Analysis

Total Nitrogen (N) .....	8.0%
7.5% Nitrate Nitrogen	
0.5% Urea Nitrogen	
Soluble Potash (K <sub>2</sub> O).....	4.0%
Soluble Calcium (Ca).....	10.0%
Boron (B) .....	0.05%
Silicon (Si) .....	0.01%

Derived from calcium nitrate, urea, potassium nitrate, boric acid, silicon



1 U.S. Gallon, Net Weight: 12.35 lbs/3.78 Liters/5.60 kg  
Specific Gravity 1.48, pH: 1.1

# GRIGG™ SUPREMA®

## 12-0-12 + Micros

GRIGG™ Suprema® has a 1-to-1 ratio of nitrogen to potassium for balanced inputs, and a micronutrient package for optimum growth and health. It is an excellent option for zero phosphorous fertilizer programs.

### Suprema Advantages

- 20% analysis of plant based amino acids, organic acids and complex polysaccharides.
- Organically chelated micronutrient package.
- A unique form of highly available potassium organic acids that are quickly absorbed.
- A pH of 6.3 to promote absorption and reduce burn potential.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

Apply 3-6 fl oz per 1000 sq ft (10-20 L/Ha) of Suprema in combination with other GRIGG products.

Apply 6 fl oz per 1000 sq ft (20 L/Ha) rate when Suprema is applied every 7-14 days as a stand alone product.

### Guaranteed Analysis

Total Nitrogen (N) . . . . .	12.0%
12.0% Urea Nitrogen	
Soluble Potash (K <sub>2</sub> O) . . . . .	12.0%
Boron (B) . . . . .	0.005%
Chelated Iron (Fe) . . . . .	1.0%
Chelated Manganese (Mn) . . . . .	0.05%
Chelated Zinc (Zn) . . . . .	0.05%

Derived from urea, potassium nitrate, phosphoric acid, potassium phosphate, iron, zinc and manganese glucoheptonates.



1 U.S. Gallon, Net Weight: 10.93 lbs/3.78 Liters/4.96 kg  
Specific Gravity: 1.31, pH: 6.3

GRIGG™

# TUFF TURF®

## 1-0-14 + Si + Micros

GRIGG™ Tuff Turf® supplies potassium (K) which increases turfgrass tolerance to cold temperatures, high temperatures, moisture stress, and salinity stress.

### Tuff Turf Advantages

- Contains high levels of available potassium (K), which can be quickly absorbed by the plant tissue and is very effective when applied as a foliar.
- Benefits of high potassium levels in turfgrass plants are well documented and include enhanced resistance to abiotic stress.
- Contains silicon (Si) for plant strength and magnesium (Mg) for improved chlorophyll production and turf color.
- Also contains organic and amino acid based chelated micronutrients, including iron (Fe).

### Application and Use

For general foliar application guidelines please refer to page 50.

**Turfgrass:**

Apply 3-8 fl oz per 1000 sq ft (10-20 L/Ha).

### Guaranteed Analysis

Total Nitrogen (N) .....	1.0%
0.25% Nitrate Nitrogen	
0.75% Urea Nitrogen	
Soluble Potash (K <sub>2</sub> O).....	14.0%
Chelated Magnesium (Mg) .....	0.5%
Chelated Iron (Fe) .....	0.5%
Silicon (Si) .....	0.05%

Derived from urea, ammonium nitrate, potassium hydroxide, silicon, iron, magnesium and manganese glucoheptonates.



1 U.S. Gallon, Net Weight: 10.93 lbs/3.78 Liters/4.96 kg  
Specific Gravity 1.31, pH: 4.3



GRIGG™

# ULTRAPLEX®

## 4-0-3 + 2% Fe + Micros

GRIGG™ Ultraplex® is a proprietary and sophisticated combination of liquid macro and micronutrients, plant and root promoting stimulators, a buffering agent, and plant and soil wetting agents.

### Ultraplex Advantages

- An effective, non-ionic organic surfactant.
- Enhances response of fertilizers and can improve efficiency of plant protectants and plant growth regulators.
- Effective water buffering agent designed to resist large changes in spray tank pH.
- Provides healthy color and combats stress.
- Use Ultraplex with plant growth regulator programs for better color and improved uptake.
- Now contains magnesium, increased kelp content and additional plant stimulators.

### Application and Use

For general foliar application guidelines please refer to page 50.

#### Turfgrass:

Use 3-6 fl oz per 1000 sq ft (10-20 L/Ha) of Ultraplex in combination with other GRIGG products. Use 6 fl oz per 1000 sq ft (20 L/Ha) rate when Ultraplex is applied 7-14 days as a stand alone product.

### Guaranteed Analysis

Total Nitrogen (N) . . . . .	4.0%
0.5% Nitrate Nitrogen	
3.5% Urea Nitrogen	
Soluble Potash (K <sub>2</sub> O) . . . . .	3.0%
Chelated Magnesium (Mg) . . . . .	0.5%
Boron (B) . . . . .	0.05%
Chelated Copper (Cu) . . . . .	0.05%
Chelated Iron (Fe) . . . . .	2.0%
Chelated Manganese (Mn) . . . . .	0.4%
Chelated Zinc (Zn) . . . . .	0.4%

Derived from urea, potassium, sulfate, magnesium sulfate, boric acid, iron, zinc, manganese and copper glucoheptonates.

Additional Contents: plant based amino acids, natural saponins, plant extracts, carbohydrates, fruit fiber, protein and enzyme precursors.



1 U.S. Gallon, Net Weight: 10.68 lbs/3.78 Liters/4.85 kg  
Specific Gravity 1.28, pH: 2.9

# GRIGG™ ZINC 5% Foliar Chelate

GRIGG™ ZINC 5% is an organic chelate that is biodegradable and has a high stability constant.

It is a part of the GRIGG™ Proven Foliar® nutrient product line, which is designed to be foliar applied and completely foliar absorbed while drying on the target plant.

## ZINC 5% Advantages

- Foliar absorbed nutrient source that will boost micronutrient levels in any program where extra micronutrients are needed.
- Zinc is required as an activator for many enzymes.

## Application and Use

For general foliar application guidelines please refer to page 50. Apply 1-6 fl oz per 1000 sq ft (3-20 L/Ha). Repeat as needed.

### Turfgrass:

With severe deficiency use the highest rate of application.

### Guaranteed Analysis

Zinc (Zn) . . . . . 5.0%  
5.0% Chelated Zinc

Derived from zinc glucoheptonate.



1 U.S. Gallon, Net Weight: 10.26 lbs/3.78 Liters/4.66 kg  
Specific Gravity: 1.23, pH 0.6

GRIGG™

# GREENSPEC® GRANULAR NUTRIENTS

## Overview

GRIGG™ GreenSpec® granular nutrients provide fast and consistent nutrients to the plant in bio-available form. They contain natural compounds that enhance soil microbiology and chemistry, and provide an efficient nutrient delivery system with superior performance and environmental safety.

GreenSpec homogeneous granular fertilizers were developed in response to customer requests for granular fertilizers that would complement the use of GRIGG™ Proven Foliar® nutrients.

GRIGG customers can expect the applied granules to spread easily with minimal dust and to dissolve quickly to penetrate dense modern grasses.

For MSDS information and spreader setting guidelines visit [www.GRIGG.co](http://www.GRIGG.co).

Most fertilizer products stain. Keep GreenSpec products off unwanted areas such as sidewalks, patios, driveways, fences, painted surfaces, masonry, stucco surfaces, and siding. As a precaution, sweep or blow off these areas prior to irrigation or rainfall.

## Proprietary Protein Nitrogen Technology

GreenSpec was designed for purity and is formulated with a proprietary protein nitrogen (N) technology to deliver the following results:

- Superior performance with controlled and lasting color.
- Efficient nutrient delivery.
- Bridged organic formulations for more dependable response under a variety of agronomic conditions.

## Key Components of GRIGG™ GreenSpec Proprietary Protein Nitrogen Technology

### ■ Organic proteins

The nitrogen and phosphorous components in GreenSpec products are obtained from specially processed proteins that are used in the food and flavoring industry. These proteins are manufactured differently from byproducts found in most other fertilizers. Less heat is used, along with specialized enzymes that give the material soluble qualities.

### ■ Solar Evaporated Sulfate of Potash

After evaporation, the natural minerals are separated using only hot water. This results in potassium is in its purest, natural form with no chlorides, no heavy metals and a low salt index.

### ■ Kelp (*Ascophyllum nodosum*)

The proprietary type of kelp used in GreenSpec granular nutrients contains a high amount of calcium and valuable minerals, and is extremely low in salt and sodium.

### ■ Humic Acid

Humic acid may enhance micronutrients.

GRIGG™

# ALL NATURAL ORGANIC

10-2-4

## GRIGG™ All Natural Organic Advantages

- Exceptional nutrient availability in an all natural organic form. It has a great 5:1:2 ratio, is completely ground water safe, and contains no unpleasant odors.
- Excellent spreading and dissolving characteristics. This product is dust-free and designed to penetrate the dense turfgrass canopies. GRIGG™ GreenSpec® protein technology assures optimum nutrient release, to facilitate faster visual results from an all natural organic fertilizer.
- Offers sustained, even feeding (up to 10-12 weeks) for controlled growth with less frequent mowing and fewer grass clippings.
- Nutrient release and subsequent plant uptake is determined by microbial activity and will vary based on soil moisture, temperature, pH, and turfgrass species.

## Application and Use

### Fairways:

10 lbs / 1000 sq ft (50 g/m<sup>2</sup>)

435 lbs / acre (490 kg/Ha)

### Greens:

5-10 lbs / 1000 sq ft (25-50 g/m<sup>2</sup>)

218-435 lbs / acre (245-490 kg/Ha)

Always water in thoroughly after application to help speed up breakdown.

## Guaranteed Analysis

Total Nitrogen (N) .....	10.0%
1.1% Water Soluble Organic Nitrogen	
8.9% Water Insoluble Organic Nitrogen	
Available Phosphate (P <sub>2</sub> O <sub>5</sub> ) .....	2.0%
Soluble Potash (K <sub>2</sub> O).....	4.0%
Calcium (Ca) .....	1.5%
Sulfur (S) .....	1.0%
1.0% Combined Sulfur	

Derived from soybean meal, bone meal, sulfate of potash, kelp (*Ascophyllum nodosum*).

Also contains non plant food ingredient: 3.20% humic acid derived from leonardite.



# GRIGG™ ENDURANCE™

8-4-16

## GRIGG™ Endurance™ Advantages

- Formulated to revitalize and strengthen turf, as well as improve color. It conditions and improves depleted soils while protecting ground water from nutrient leaching and high heavy metal concentrations.
- Endurance is the ideal fertilizer for promoting wear tolerance and stress resistance. Apply early or late fall to maximize overwinter survivability.
- 100% of the potassium source is sulfate of potash, derived from solar evaporation ponds. It has the lowest salt index of any raw potassium source.
- Offers sustained, even feeding and color for up to 8-10 weeks, with less frequent mowing.
- Nutrient release and subsequent plant uptake is determined by microbial activity and will vary based on soil moisture, temperature, pH, and turfgrass species.

## Application and Use

### Fairways:

10-15 lbs / 1000 sq ft (49-73 g/m<sup>2</sup>)  
435-653 lbs / acre (488-733 kg/Ha)

### Greens:

7-14 lbs / 1000 sq ft (34-68 g/m<sup>2</sup>)  
305-610 lbs / acre (342-684 kg/Ha)

Always water in thoroughly after application to help speed up breakdown.

## Guaranteed Analysis

Total Nitrogen (N) .....	8.0%
2.0% Ammoniacal Nitrogen	
4.5% Water Soluble Nitrogen	
1.5% Water Insoluble Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	4.0%
Soluble Potash (K <sub>2</sub> O) .....	16.0%
Calcium (Ca) .....	8.0%
Total Sulfur (S) .....	6.0%
6.0% Combined Sulfur	
Iron (Fe) .....	3.0%
1.5% Water Soluble Iron	
Manganese (Mn) .....	0.2%
0.08% Water Soluble Manganese	
Zinc (Zn) .....	0.1%
0.04% Water Soluble Zinc	

Derived from soybean meal, urea, ammonium phosphate, sulfate of potash, calcium carbonate, ferrous sulfate, iron sucrate, manganese sucrate, zinc sucrate, kelp (*Ascophyllum nodosum*).

Also contains non plant food ingredient: 3.20% humic acid derived from leonardite.



# GRIGG™ SEVEN IRON™

7-7-7

## GRIGG™ Seven Iron™ Advantages

- Formulated to produce dark green color and correct nutrient depleted soils.
- Contains micronutrients specially formulated with sugars called “sucrates.”
- Especially effective in promoting recovery from mechanical or environmental stress and during turfgrass establishment.
- A multi-purpose plant food, starter fertilizer, pre-plant, and soil conditioning fertilizer that has been specially designed for use in all seasons. GRIGG™ Seven Iron™ contains 7% iron in both quick and slow release forms. Iron sulfate provides a more immediate release, while iron sucrate helps maintain long-term color.
- Nutrient release and subsequent plant uptake is determined by microbial activity and will vary based on soil moisture, temperature, pH, and turfgrass species.

## Application and Use

### Fairways:

10-15 lbs / 1000 sq ft (49-73 g/m<sup>2</sup>)  
435-653 lbs / acre (488-733 kg/Ha)

### Greens:

7-14 lbs / 1000 sq ft (34-68 g/m<sup>2</sup>)  
305-610 lbs / acre (342-684 kg/Ha)

Always water in thoroughly after application to help speed up breakdown.

## Guaranteed Analysis

Total Nitrogen (N) .....	7.0%
1.4% Ammoniacal Nitrogen	
4.6% Water Soluble Nitrogen	
1.0% Water Insoluble Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	7.0%
Soluble Potash (K <sub>2</sub> O) .....	7.0%
Calcium (Ca) .....	7.0%
Total Sulfur (S) .....	7.0%
7.0% Combined Sulfur	
Iron (Fe) .....	7.0%
2.0% Water Soluble Iron	
Manganese (Mn) .....	1.5%
0.5% Water Soluble Manganese	
Zinc (Zn) .....	0.2%
0.08% Water Soluble Zinc	

Derived from urea, soybean meal, ammonium phosphate, sulfate of potash, calcium carbonate, ferrous sulfate, iron sucrate, manganese sucrate, zinc sucrate, kelp (*Ascophyllum nodosum*).

Also contains non plant food ingredient: 3.20% humic acid derived from leonardite.



# GRIGG™ TURF RALLY™

16-4-8

## GRIGG™ Turf Rally™ Advantages

- Formulated to produce a controlled and lasting color response. It conditions and improves nutrient depleted soils and is formulated to be ground water safe.
- Special nitrogen formula that works in 3 different ways. A small amount of ammoniacal nitrogen (2%) gives a quick feeding and activates growth. A large percentage of water soluble, organic nitrogen (11%) quickly works its way into the soil where it provides continuous, even feeding. The smaller amount of water insoluble organic nitrogen (3%), is a slow release form of nitrogen that feeds the turf for a longer period of time. This triple action formula offers sustained, even feeding (up to 8-12 weeks) that means more controlled growth with fewer grass clippings.
- Contains micronutrients specially formulated with sugars called “sucrates.”
- Nutrient release and subsequent plant uptake is determined by microbial activity and will vary based on soil moisture, temperature, pH, and turfgrass species.

## Application and Use

### Fairways:

4-6.25 lbs / 1000 sq ft (20-30 g/m<sup>2</sup>)

174-272 lbs / acre (195-305 kg/Ha)

### Greens:

3.13 lbs / 1000 sq ft (15 g/m<sup>2</sup>)

136 lbs / acre (150 kg/Ha)

Always water in thoroughly after application to help speed up breakdown.

## Guaranteed Analysis

Total Nitrogen (N) .....	16.0%
2.0% Ammoniacal Nitrogen	
11.0% Water Soluble Nitrogen	
3.0% Water Insoluble Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) .....	4.0%
Soluble Potash (K <sub>2</sub> O) .....	8.0%
Calcium (Ca) .....	6.0%
Total Sulfur (S) .....	6.0%
6.0% Combined Sulfur	
Iron (Fe) .....	3.0%
1.5% Water Soluble Iron	
Manganese (Mn) .....	0.2%
0.08% Water Soluble Manganese	
Zinc (Zn) .....	0.1%
0.04% Water Soluble Zinc	

Derived from soybean meal, urea, ammonium phosphate, sulfate of potash, calcium carbonate, ferrous sulfate, iron sucrate, manganese sucrate, zinc sucrate, kelp (*Ascophyllum nodosum*).

Also contains non plant food ingredient: 3.20% humic acid derived from leonardite.



# GRIGG™ ZEROPHOS®

7-0-14

## GRIGG™ Zerophos® Advantages

- A special formulation containing no phosphorus for use in environmentally restricted areas.
- Contains micronutrients specially formulated with sugars called “sucrates.”
- A multi-purpose plant food and soil conditioning fertilizer that has been specially designed for use in all seasons. Zerophos contains 7% iron in two release forms. Iron sulfate releases quickly for faster results. Iron sucrate releases more slowly to help maintain long-term color.
- Nutrient release and subsequent plant uptake is determined by microbial activity and will vary based on soil moisture, temperature, pH, and turfgrass species.

## Application and Use

### Fairways:

10-15 lbs / 1000 sq ft (49-73 g/m<sup>2</sup>)  
435-653 lbs / acre (488-733 kg/Ha)

### Greens:

7-14 lbs / 1000 sq ft (34-68 g/m<sup>2</sup>)  
305-610 lbs / acre (342-684 kg/Ha)

Always water in thoroughly after application to help speed up breakdown.

## Guaranteed Analysis

Total Nitrogen (N) . . . . .	7.0%
1.40% Ammoniacal Nitrogen	
4.60% Water Soluble Nitrogen	
1.00% Water Insoluble Nitrogen	
Soluble Potash (K <sub>2</sub> O) . . . . .	14.0%
Calcium (Ca) . . . . .	7.0%
Total Sulfur (S) . . . . .	7.0%
7.0% Combined Sulfur	
Iron (Fe) . . . . .	7.0%
2.0% Water Soluble Iron	
Manganese (Mn) . . . . .	1.5%
0.5% Water Soluble Manganese	
Zinc (Zn) . . . . .	0.2%
0.08% Water Soluble Zinc	

Derived from soybean meal, urea, ammonium phosphate, sulfate of potash, calcium carbonate, ferrous sulfate, iron sucrate, manganese sucrate, zinc sucrate, kelp (*Ascophyllum nodosum*).

Also contains non plant food ingredient: 3.20% humic acid derived from leonardite.





# SOIL AMENDMENTS

## General Information

GRIGG™ soil amendments are available in two different calcium and potassium formulations that are tailored to meet specific soil and environmental needs. Two additional GRIGG soil amendment products are formulated with zeolite, which is an effective tool for increasing cation exchange capacity (CEC) in soils.

## Importance of Calcium as a Plant Nutrient

Calcium (Ca) is an essential secondary macronutrient. Functions of calcium within the plant include: increasing cell wall strength, improving cell membrane and osmotic functioning, which affects root extension. Calcium is also an important signal messenger when plant injury or pathogen infections occur, or when the plant is exposed to intense light and temperature conditions.

The process of calcium uptake by plant roots occurs as a divalent cation ( $\text{Ca}_2^+$ ) and is considered a passive process. Once calcium has entered the plant, it is relatively immobile. Applied calcium to soil provides available  $\text{Ca}_2^+$ , alkalinity as lime (GRIGG™ C K-Balance™), or exchange with soil adsorbed sodium as gypsum (GRIGG™ S K-Balance™), thus increasing sodium leaching after irrigation or rainfall.

For these reasons, applying supplemental calcium in bio-available form is recommended in a combined soil and foliar nutrient management program. This ensures that an adequate supply of calcium is available to turfgrass. It is particularly important on turf that has high sand content in the root zone.

## The Use of Zeolite as a Soil Amendment

GRIGG™ Z-mendit™ is a soil amendment that is formulated with a natural form of zeolite (clinoptilolite, a microporous tetrahedral arrangement of silica and alumina).

Z-mendit is generally applied pre-plant, topically, or injected into high sand content root zones or unproductive soils with little organic material. When applied to turfgrass, the scientific benefits of Z-mendit include accelerated establishment, limited nutrient leaching, lower fertilizer requirements, improved turf vigor, and increased root development. When incorporated at the recommended rate of 10% by volume, Z-mendit provides a greater increase in soil CEC compared to competitive soil amendments.

# GRIGG™ C K-BALANCE™

0-0-24

## GRIGG™ C K-Balance™ Advantages

- C K-Balance combines calcium and potassium in a greens grade granule to strengthen and protect turf from environmental stresses and heavy use.
- Can be applied monthly as a management tool to maintain optimum potassium content and consistency in the rhizosphere.
- C K-Balance is one-half micronized limestone ground to a tiny particle size that can pass through 200 mesh.
- C K-Balance is one-half sulfate of potash in its purest, natural form. It is harvested from solar evaporation ponds.
- Nutrient release and subsequent plant uptake determined by microbial activity and will vary based on soil moisture, temperature, pH, and turfgrass species.

## Application and Use

### Fairways:

3-4 lbs / 1000 sq ft (15-39 g/m<sup>2</sup>)

134-348 lbs / acre (150-390 kg/Ha)

### Greens:

3-4 lbs / 1000 sq ft (15-39 g/m<sup>2</sup>)

134-348 lbs / acre (150-390 kg/Ha)

Always water in thoroughly after application to help speed up breakdown.

### Guaranteed Analysis

Soluble Potash (K <sub>2</sub> O) . . . . .	24.0%
Calcium (Ca) . . . . .	18.0%
Sulfur (S) . . . . .	8.0%
8% Combined Sulfur	

Derived from sulfate of potash, calcium carbonate (CaCO<sub>3</sub>).



# GRIGG™ S K-BALANCE™

0-0-24

## GRIGG™ S K-Balance™ Advantages

- S K-Balance combines calcium and potassium in a greens grade granule to strengthen and protect turf from environmental stresses and heavy use.
- Calcium is derived from gypsum ( $\text{CaSO}_4$ ). First choice in calcium amendment options when soil pH is greater than 7.0, or excess carbonate is present.
- Can be applied monthly as management tool to maintain optimum potassium and calcium content and consistency in the profile.
- S K-Balance is one-half micronized gypsum ground to a tiny particle size that can pass through 200 mesh.
- S K-Balance is one-half sulfate of potash in its purest, natural form. It is harvested from solar evaporation ponds.
- Nutrient release and subsequent plant uptake determined by microbial activity and will vary based on soil moisture, temperature, pH, and turfgrass species.

## Application and Use

### Fairways:

3-4 lbs / 1000 sq ft (15-39 g/m<sup>2</sup>)

134-348 lbs / acre (150-390 kg/Ha)

### Greens:

3-4 lbs / 1000 sq ft (15-39 g/m<sup>2</sup>)

134-348 lbs / acre (150-390 kg/Ha)

Always water in thoroughly after application to help speed up breakdown.

### Guaranteed Analysis

Soluble Potash ( $\text{K}_2\text{O}$ )	24.0%
Calcium (Ca)	11.0%
Total Sulfur (S)	.16.0%
16% Combined Sulfur	

Derived from sulfate of potash, gypsum.



**GRIGG™**

# **RHIZO AIDE™**

## **1-1-0**

GRIGG™ RhizoAide™ is a soil amendment that contains clinoptilolite, which is a microporous mix of silica and alumina, that can be added to other growing media to enhance performance.

### **Rhizo Aide Advantages**

- 100% natural and organic.
- Can be used anytime year round (optimal between autumn/spring).
- Beneficial as a fertilizer and as soil amendment on any soil type.
- Contains non-ionic wetting agent.
- Slow release formula - up to 6 weeks.
- Best results achieved by brushing and watering in the material.
- Ideal to use after aeration or similar type of mechanical treatment.
- Should not be used closer than 8 feet to ponds, lakes and streams

### **Application and Use**

**Fairways:**

6 lbs / 1000 sq ft (30 g/m<sup>2</sup>)  
268 lbs / Acre (300 kg/Ha)

**Greens and Tees:**

6 lbs / 1000 sq ft (30 g/m<sup>2</sup>)  
268 lbs / acre (300 kg/Ha)

**If Necessary, Second/Third Application:**

3-6 lbs / 1000 sq ft (15-30 g/m<sup>2</sup>)  
134-268 lbs / acre (150-300 kg/Ha)

### **Guaranteed Analysis**

Total Nitrogen (N) .....	1.4%
1.4% organic nitrogen	
Available Phosphate (P <sub>2</sub> O <sub>5</sub> ) .....	0.7%
Soluble Potash (K <sub>2</sub> O).....	0.4%
Magnesium (Mg) .....	2.0%

Derived from: Plant based oil seed meal, Magnesium oxide



# GRIGG™ Z-MENDIT™

GRIGG™ Z-mendit™ is a soil amendment that improves plant performance when it is added to a root zone. It is a clinoptilolite, which is a microporous mix of silica and alumina, that can be added to other growing media to enhance performance.

## Z-mendit™ Advantages

- Use for sports turf, golf greens and tees, in greenhouse- nursery mixes, in garden soils, planting beds and containers, for landscaping, roof gardens, transplants, and horticultural crops.
- Particularly suitable for sandy and coarse textured soils.
- Is a zeolite (clinoptilolite), a natural occurring mineral with microscopic pores. Researchers have reported benefits in water use efficiency, environmental leachate reductions and plant fertility.
- Has a bulk density of 60 lb/cu ft and carries a very high CEC (165 meq/100 grams) so only 8% to 10% in the root zone will increase your nutrient reservoir substantially to better facilitate nutrient availability and plant utilization in the root zone.
- Allows you to load the nutrients in balance where you need them - in the root zone. This by extension will assist efforts in offsetting the detriment constantly imposed by deteriorating water quality and the use of re-claimed effluent.
- Naturally light green in color and is ideal for top-dressing after aeration or for use with a \*DryJect® machine. This will further compliment and enhance your cultural practices by improving air and water movement, and help to prevent surface organic layers from sealing and restricting these vital functions as well as allowing for optimum gas exchange.

## Guaranteed Analysis

### Soil Amending Ingredients

Zeolite (Clinoptilolite) Ore .....100%

\*DryJect is a registered trademark of DryJect, LLC



## Application and Use

### Turf Dressing:

Apply Z-mendit to existing turf. Best results will be obtained if Z-mendit is worked into the root zone via aeration, drill and fill, \*Dry-ject® or other method. Normal application is 275 to 500 lbs per 1000 sq ft (120-245 kg/100 M<sup>2</sup>) with aeration or other procedure to enhance placement into the root zone.

### Turf - New Construction:

Z-mendit will enhance establishment of seed, sprigs or sod. Apply at least 5% by volume to top 6" (15 cm). Recommended rate is 10% - 15% by volume. Blend with sand prior to placement or lay out a grid of known size and apply the appropriate amount to each grid. Blend with rake or rototiller then proceed with seeding, sprigging or sodding.

### Divot Mix:

Mix Z-mendit with divot mix for a 50% Z-mendit 50% sand ratio to enhance germination and moisture and nutrient retention capabilities.

Always water in thoroughly after application to help speed up breakdown.

GRIGG™

# SPECIALTY SOIL FERTILIZERS

## General Information

GRIGG™ specialty soil fertilizers are designed to complement GRIGG™ Proven Foliar® nutrients and GRIGG™ GreenSpec® granular nutrients to provide balanced soil health and optimal turf quality.

Specialty soil fertilizers are used to stimulate microbial activity in the rhizosphere, build soil structure, maintain a balance of water and air in soil pore space, promote strong root growth, generate recovery from biotic and abiotic stress and deliver readily available, stabilized nutrients to the root zone.

Unlike Proven Foliar products, specialty soil fertilizers should be watered into the root zone soon after application for best results.

GRIGG specialty soil fertilizers are diverse and contain soil conditioning agents, biostimulants, wetting agents, macro-and micro-nutrients and/or microbial substrates.

For more information regarding proper use of GRIGG specialty soil fertilizers and how they can enhance your turf management programs, contact your GRIGG territory sales manager and visit [www.GRIGG.co](http://www.GRIGG.co).

# GRIGG™ BIO BLEND™

## 10-0-0 + 5% Ca

GRIGG™ Bio Blend™ is designed for use in all soil types. Bio Blend aids in water penetration, can function as a microbial substrate, buffers salts, chelates soil nutrients, encourages root growth and biologically buffers toxic chemicals.

### Bio Blend Advantages

- Designed to stimulate microbial populations within the rhizosphere, to buffer salts with calcium, and to promote plant and microbial health.
- Specifically designed to be used with GRIGG™ Carboplex®. Bio Blend stimulates the rhizosphere, while Carboplex provides a food source.
- Will increase nutrient uptake by turf and may promote decomposition of the thatch layer as a result of increased microbial activity.
- Enhancing nutrient uptake can increase tolerance to midsummer stress.
- Will enhance the establishment of seedlings.

### Application and Use

Bio Blend is a root stimulator and should be mixed with Carboplex according to the listed application rate (below) and should be watered in to balance soil and rhizospheric health.

#### Turfgrass:

Apply 3-6 fl oz (10-20 L/Ha) of Bio Blend in 2 gallons or more of water per 1000 sq ft to penetrate soil surface. Repeat application 4-8 times per year. Water in within 24 hours.

When applied with Carboplex: Apply 3 fl oz per 1000 sq ft (10 L/Ha) Bio Blend with the applicable Carboplex rate and water within 24 hours.

Irrigation application: Inject 3-6 fl oz per 1000 sq ft (10-20 L/Ha) 4-8 times per year during water cycle.

### Guaranteed Analysis

Total Nitrogen (N) .....	10.0%
1.0% Ammoniacal Nitrogen	
5.0% Nitrate Nitrogen	
4.0% Urea Nitrogen	
Soluble Calcium (Ca) .....	5.0%

Derived from urea, ammonium nitrate, calcium nitrate.



1 U.S. Gallon, Net Weight: 11.02 lbs/3.78 Liters/5.00 kg  
Specific Gravity 1.32, pH: 1.00

**GRIGG™**  
**BURLEY GREEN®**  
 Slow Release 18-2-3

**GRIGG™ Burley Green® Advantages**

- Cost effective for fairway application.
- Highly efficient.
- Low burn potential.
- Correctly complexed micronutrients.
- Recommended for foliar application or fertigation.
- Compatible with GRIGG chelated micronutrients, biostimulants and surfactants.
- Contains plant based amino acids and natural acids.

**Application and Use**

For additional micronutrients add GRIGG Ultraplex®, GRIGG™ Micro Burst™, or GRIGG™ Iron Combo Chelate to any GRIGG foliar application at the rate of 2-3 fl oz per 1000 sq ft (6-10 L/Ha). GRIGG™ Ultraplex is a unique formula, no additional surfactant required.

**Turfgrass:**

As a foliar apply at the rate of 3-9 fl oz per 1000 sq ft (10-30 L/Ha) as needed.

**Guaranteed Analysis**

Total Nitrogen . . . . .	18.0%
12.0% Urea Nitrogen	
6.0% Slow Release (Triazone) Nitrogen	
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ) . . . . .	2.0%
Soluble Potash (K <sub>2</sub> O) . . . . .	3.0%

Derived from urea, ammonium sulfate, ammonium phosphate, triazone, potassium phosphate, and phosphoric acid.



1 U.S. Gallon, Net Weight 9.93 lbs/3.78 Liters/4.50 kg  
 Specific Gravity: 1.19, pH 8.8



# GRIGG™ DISPLACE®

## 12% Ca

GRIGG™ Displace® is a unique combination of readily available calcium and a soil surfactant that is specially formulated to rapidly displace sodium from the soil and add calcium for improved soil structure and water infiltration. Displace is a great tool for critical areas of golf and sports turf where sodium may accumulate.

### Displace Advantages

- Convenient and easy to use formulation that contains a wetting agent and highly effective form of calcium.
- Proprietary soil surfactant chemistry will improve product placement in difficult soil conditions.
- An excellent tool to address hydrophobic soil conditions (localized dry spots).
- Improves soil structure for better root growth, nutrient uptake, water infiltration, soil oxygenation and overall turf vigor.
- Displace is a two in one product that saves time and additional mixing.
- An excellent tool to offset high bicarbonate in irrigation water.

### Application and Use

For best results, apply Displace with 2 or more gallons of water per 1000 sq ft (400 L/Ha) and water into the root zone following application. For irrigation water quality concerns and/or sodic soils, Displace should be applied at 3 to 4 week intervals. Compatibility: A jar test should be performed when mixing Displace with any other products.

#### Turfgrass:

As a maintenance rate or for sodium problems apply 6-9 fl oz per 1000 sq ft (20-30 L/Ha).

### Guaranteed Analysis

Calcium (Ca) . . . . .12.0%

Derived from calcium malate.



1 U.S. Gallon, Net Weight: 12.02 lbs/3.78 Liters/5.18 kg  
Specific Gravity: 1.44, pH: 0.40

# GRIGG™ RHIZONIFY™

## 6-4-4

GRIGG™ Rhizonify™ is designed to improve plant and soil nutrients, carbohydrates, and moisture status.

### Rhizonify Advantages

- Contains a specifically designed wetting agent that improves nutrient placement and uniform wetting in challenging soil conditions.
- Readily available plant nutrients (N, P, K and minors) plus reactive non-plant food ingredients, including: fulvic and humic acid, plant sugars, amino and organic acids to enhance and stimulate the rhizosphere.
- Useful to manage and promote recovery from localized dry spot (LDS).
- Promotes root growth and recovery from environmental stress, disease or insect damage.

### Application and Use

#### Soil Application:

Greens and Tees: Apply 12 fl oz per 1000 sq ft (38 L/Ha) or 4 gallons per acre per month through the active growing season.

Fairways: Apply 7.5 fl oz per 1000 sq ft (24 L/Ha) through the active growing season.

Sportsfields: Apply 12 fl oz per 1000 sq ft (38 L/Ha) or 4 gallons per acre per after seedling emerges. Soil temperatures in the root zone should exceed 55° F (13° C) and environmental conditions should favor rapid growth. Monthly applications should be made during the growing season using 7.5 fl oz per 1000 sq ft (24 L/Ha).

#### Guaranteed Analysis

Total Nitrogen (N) .....	6.0%
0.76% Ammoniacal Nitrogen	
4.0% Urea Nitrogen	
1.24% Nitrate Nitrogen	
Available Phosphate (P <sub>2</sub> O <sub>5</sub> ) .....	4.0%
Soluble Potash (K <sub>2</sub> O) .....	4.0%
Iron (Fe) .....	0.2%
Manganese (Mn) .....	0.05%
Zinc (Zn) .....	0.05%

Derived from urea, ammonium nitrate, potassium nitrate, phosphoric acid, potassium phosphate, iron sulfate, manganese sulfate, and zinc sulfate. Complexed with glucoheptonates.



1 U.S. Gallon, Net Weight: 10.68 lbs/3.78 Liters/4.85 kg  
Specific Gravity 1.28, pH: 3.74

# COLORANTS FOR TURFGRASS MANAGEMENT

## Overview of Pigments and Paints

Colorants can optimize turf color and quality, improve aesthetics for dormant turf, and some pigments may provide a physiological benefit by reflecting potentially harmful near infrared (NIR) light.

Turf managers have the ability to use colorants for a specific agronomic objective, or simply paint the turf. In general, pigments and paints are chemically similar, but very different physically. Colorants contain specific pigments that produce a 'green' or 'green-blue' visible color, however its formulation and inert ingredients determine its use.

Colorants designed as paints are often applied to turf in an effort to 'cover up' or 'mask' an existing unwanted color or turf condition — and are applied infrequently. Conversely, pigments such as GRIGG™ GreenPIG™ are designed for routine use, and often applied with tank mix partners such as crop protectants and plant growth regulators or as part of a complete agronomic program. The physical characteristics of the colorant dictate to turf managers how to use these products most effectively.

## Physical Characteristics of Pigments vs. Paints

### Pigments (e.g. GreenPIG)

- Low viscosity and metal load, hence lower weight.
- Designed for repeated use and to promote plant health.
- Increased reflectance of potentially damaging NIR light.
- Formulation/use rates/timings filter more photosynthetic light for absorption and reflectance of NIR light.

### Paint

- High viscosity and metal load, hence higher weight.
- Adjuvants to promote 'stickiness' - for infrequent use.
- Corrosive to spray equipment and may cause pumpseals to leak.
- Greater staining potential.

## Are Pigments Absorbed by Turfgrass Leaf Tissue?

The answer is likely yes, but we cannot be entirely sure. It had been widely believed that colorants coat the leaf surface and remain there until being mowed off. However anecdotal evidence might suggest that pigments are absorbed. For example:

- Excellent color can be maintained for 2-3 weeks after repeated mowing — depending on rate.
- Turf response to a GRIGG GreenPIG application can vary on dormant turfgrass compared to semi dormant turfgrass.

These observations might suggest that pigment getting into the plant can provide color longevity and affect use rate and application frequency (see Figure 1).



Photo courtesy B. Whitlark

Figure 1. Different color responses from pigments and paints applied to semi dormant TifEagle Bermudagrass fairway. Photo taken the day of application.

## Things to Consider When Choosing a Colorant

Clearly differences exist between colorants — which affects the recommended use and subsequent benefit of the product(s). Carefully consider the turf species, stage of growth, and height of cut to determine the correct rate and application frequency. If you select a pigment, apply prior to turf dormancy (while turf is actively growing) and continue using routinely during the entire dormancy period\*.

GRIGG research has documented an increase in NIR light reflectance from turf treated with GreenPIG. We continue to create trials and testing to correlate this measurement with decreased oxidative stress.

# GRIGG™ COLORANTS

GRIGG™ is committed to offering only the highest quality spray markers and pigments for the turfgrass industry. They are highly concentrated for maximum efficiency and are thoroughly tested and backed by university research.

## How GRIGG™ Colorants Stack up Against Each Other:

KEY: ✓ Ideal application as determined by desired results + Possibly good results if factors considered – Less than ideal results

Product	Golf Applications	Sports Applications	Actively Growing Turf	Semidormant Turf	Dormant Turf	Near Infrared Protection	UV Protection
GRIGG™ GreenPIG™ Premium Pigment Additive	✓	+	✓	–	–	✓	–
GRIGG™ GreenPIG™ Ultra Premium Pigment Additive	✓	+	✓	✓	✓	✓	–
GRIGG™ GreenPIG™-UV Premium Pigment Additive	✓	+	✓	–	–	✓	✓
GRIGG™ Spaint® Sports Turf Colorant	+	✓	✓	✓	✓	–	–
GRIGG™ Markit-Blue™ Blue or Green Spray Pattern Indicator	✓	✓	✓	✓	✓	–	–

### GRIGG™ GreenPIG™

GRIGG GreenPIG and GRIGG GreenPIG Ultra contain the same base product, complete with formulation stability and near infrared (NIR) protection, but have a different colorant package. GreenPIG Ultra provides a natural, deep green color and remains the better choice for turf that has already lost color due to dormancy or other factors. While the original GreenPIG formulation provides excellent turf color as part of a general maintenance program. GreenPIG-UV provides the added value of blocking potentially harmful ultraviolet (UV) light with its proprietary UV protection chemistry. The UV formulation provides turf managers with another color option, and is an ideal candidate for use as part of a general maintenance strategy for improving turfgrass color and performance.

### GRIGG™ Spaint®

For applications where durable and long lasting results are needed, GRIGG™ Spaint provides an effective natural green colorant for all types of turfgrass. Spaint dries fast and stands up to traffic with minimal transfer to uniforms which makes it an ideal choice for high impact sports fields. On golf courses, Spaint can be an excellent choice to color divot mixes and other uses where durable coloration is needed at any stage of growth or dormancy.

### GRIGG™ Markit-Blue™

GRIGG™ Markit-Blue™ is an excellent non-phytotoxic spray pattern indicator with additional organic ingredients that act as a spreading agent in a tank mix. By adjusting application rates of either the blue or green Markit-Blue, various strengths of visibility can be achieved. As a spray pattern indicator, Markit-Blue does not have a long lasting aesthetic effect.

\* The color attained using pigmented products is very subjective and should be tested prior to extensive use in order to determine optimum rate and application interval at different sites. Products list recommended rates as a guideline.



# GRIGG™ GREENPIG™

GRIGG™ GreenPIG™ is a premium pigment additive specifically formulated for golf courses and sports turf facilities to enhance and extend aesthetic turf appearances. GreenPIG is an excellent tool to enhance turf color during the growing season and to mask dormant turfgrass in the winter months. University research has shown that tank mixing GreenPIG with GRIGG™ Fairphyte® can improve turf performance and quality during times of summer stress.

## GreenPIG Advantages

- Highly concentrated for low use rates.
- Long lasting means less frequent applications.
- Cost competitive, fits most budgets.
- Natural color improves visual quality and turf presentation.
- Less abrasive on spray pumps than most turf paints.
- Improved turf health by reducing oxidative stress during exposure to high heat.
- Alternative to overseeding an excellent way to reduce costs and provide superior winter putting surface.

## Application and Use

Do not apply near waterways. Do not apply to wet turf, as it may delay drying of GreenPIG. This product may stain, keep off unwanted areas. If accidentally spilled, GRIGG pigments can be removed from skin or equipment with several washings of soap and water. Avoid letting GRIGG pigments concentrate come into contact with fabrics.

### Cool Season Turfgrass-Putting Greens:

10-14 oz/acre (1 L/Ha) maintenance rate.

14-16 oz/acre (1 L/Ha) dormant, semi dormant.

### Cool Season Turfgrass-Fairways:

14-18 oz/acre (1.25 L/Ha) maintenance rate.

16-20 oz/acre (1.25 L/Ha) dormant, semi dormant.

### Warm Season Turfgrass:

14-18 oz/acre (1.25 L/Ha) maintenance rate.

16-20 oz/acre (1.25 L/Ha) dormant, semi dormant.



1 U.S. Gallon, Net Weight 11.35 lbs/3.78 Liters/5.15 kg  
Specific Gravity: 1.36, pH: 7.5 - 9.5

# GRIGG™ GREENPIG™ ULTRA

GRIGG™ GreenPIG™ Ultra is a premium pigment additive specifically formulated for golf courses and turf facilities to enhance and extend aesthetic turf appearances. GreenPIG Ultra is an excellent tool to enhance turf color during the growing season and to mask dormant turfgrass in the winter months. GreenPIG Ultra is engineered with UV stable pigments and provides a natural, deep green color.

## GreenPIG Ultra Advantages

- Highly concentrated for low use rates.
- Long lasting means less frequent applications.
- Cost competitive, fits most budgets.
- Natural deep green color improves visual quality and turf presentation on all grass species, including semi-dormant or dormant turfgrass.
- Less abrasive on spray pumps than most turf paints.
- Improved turf health by reducing oxidative stress during exposure to high heat.
- Alternative to overseeding an excellent way to reduce costs and provide superior winter putting surface.

## Application and Use

Do not apply near waterways. Do not apply to wet turf, it may delay drying of GreenPIG Ultra. This product may stain, keep off unwanted areas. If accidentally spilled, GRIGG pigments can be removed from skin or equipment with several washings of soap and water. Avoid letting GRIGG pigments concentrate come into contact with fabrics.

### Cool Season Turfgrass-Putting Greens:

10-14 oz/acre (1 L/Ha) maintenance rate.

Up to 32 oz/acre (2 L/Ha) dormant, semi dormant.

### Cool Season Turfgrass-Fairways:

14-20 oz/acre (1.25 L/Ha) maintenance rate.

Up to 32 oz/acre (2 L/Ha) dormant, semi dormant.

### Warm Season Turfgrass:

14-24 oz/acre (1.25 L/Ha) maintenance rate.

Up to 32 oz/acre (2 L/Ha) dormant, semi dormant.



1 U.S. Gallon, Net Weight 10.02 lbs/3.78 Liters/4.54 kg  
Specific Gravity: 1.20, pH: 8.0 - 9.5

# GRIGG™ GREENPIG™-UV

GRIGG™ GreenPIG™-UV is another innovative colorant product that contains a proprietary compound designed to block ultraviolet light for enhanced turf color and quality. Turf managers now have another option to improve turf performance by reducing its exposure to potentially harmful ultraviolet (UV) and near infrared (NIR) light, while maintaining optimum capture of photosynthetically active visible light. This may promote more efficient energy capture and a reduction in oxidative stress.

## GreenPIG-UV Advantages

- Blocks potentially harmful ultraviolet (UV) and near infrared light (NIR).
- Improves turfgrass color and quality.
- Ideal for use on all turfgrass species as part of general maintenance program.
- Safe on application equipment.
- Fast dry time.
- Tank mix compatibility.

## Application and Use

Do not apply near waterways. Do not apply to wet turf, it may delay drying of GreenPIG-UV. This product may stain, keep off unwanted areas. If accidentally spilled, GRIGG pigments can be removed from skin or equipment with several washings of soap and water. Avoid letting GRIGG pigments concentrate come into contact with fabrics.

### Cool Season Turfgrass- Putting Greens:

1.5-3 oz (44-88 ml) with 50-100 gallons (189-378 L) of water.

### Dormant Turf:

Do NOT use on dormant or semi-dormant turfgrass. For dormant turf, use GreenPIG Ultra.



1 U.S. Gallon, Net Weight 9.76 lbs/3.78 Liters/4.43 kg  
Specific Gravity: 1.17, pH: 8.1

# GRIGG™ MARKIT-BLUE™

GRIGG™ Markit-Blue™ is a spray pattern indicator that may be used with a boom sprayer, row-crop riding equipment, backpack, or wand sprayers.

## Markit-Blue Advantages

- Provides the applicator with many benefits, including the assurance of even applications of material to prevent unsightly streaking or skips.
- Contains a proprietary component that will improve uptake of nutrients being applied for better fertilizer efficacy and enhanced longevity.
- Markit-Blue is non-phytotoxic.

## Application and Use

GRIGG spray pattern indicators should be added to the spray tank when it is approximately half full. Use 16-32 fl oz of the spray pattern indicator for 100 gallons of spray solution. When using handheld or backpack sprayers (i.e., 3-5 gallons) use only one ounce of spray pattern indicator per gallon. The above rates are an approximation. Turf or weed color, height and individual water conditions such as hardness, pH, iron content, etc., may dictate variations from the above suggested rates. Slight adjustment is recommended. Test for required concentration before use and adjust as needed.

If accidentally spilled, GRIGG spray pattern indicators can be removed from skin or equipment with several washings of soap and water. Avoid letting spray pattern indicator concentrate come into contact with fabrics.



1 U.S. Gallon, Net Weight 8.49 lbs/3.78 Liters/4.00 kg  
Specific Gravity: 1.06, pH: 7.0



# GRIGG™ SPAIN™

GRIGG™ Spaint® is a sport turf colorant that provides a natural green color to any sports turf surface. It is durable and long lasting, and may be used on all turfgrass. Spaint is ideal for high impact sports fields because it dries fast and stands up to traffic.

## Spaint Advantages

- Effective, durable and long-lasting paint colorant for all turfgrass.
- Custom engineered with an eco-friendly binder that dries fast and stands up to traffic.
- Reduced rub off to shoes and uniforms.
- Apply to actively growing semi or dormant turfgrass.
- Versatile as a divot sand colorant.
- Allows sports turf managers the ability to conserve valuable resources including water, fertilizer and seed.

## Application and Use

Do not apply near waterways. Do not apply to wet turf, it may delay drying of Spaint. This product may stain, keep off unwanted areas. If accidentally spilled, GRIGG pigments can be removed from skin or equipment with several washings of soap and water. Avoid letting GRIGG pigments concentrate come into contact with fabrics.

### Healthy Turf or Semi-Dormant Turf:

10-20 oz/1000 sq ft (30-60 L/Ha) with 1-2 gallons of water.

### Dormant Turf:

20-32 oz/1000 sq ft (60-100 L/Ha) with 1-2 gallons of water.

### Golf Course Divot Mix:

Mix 6 oz (177 ml) of Spaint with 8 oz (237 ml) of water per 100 lbs. (45 kg) of sand. Use a cement mixer and slowly pour colorant onto the sand. Adjust colorant water ratio as desired to achieve the desired color.



1 U.S. Gallon, Net Weight 9.85 lbs/3.78 Liters/4.47 kg  
Specific Gravity: 1.18, pH: 8.0 - 9.0

# FOLIAR ANALYSIS SUMMARY

U.S.

Liquids	Specific Gravity	lbs per 100 gal	pH	Nutrient Content														
				N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Ca	Mg	S	Fe	Mn	Zn	Cu	B	Si	Mo	Co	HPO <sub>3</sub>
GRIGG™ Amino Iron®	1.290	10.766	2.50	12.0%							5.000%	0.500%	0.500%					
		lbs of Nutrient per gal:		1.2919							0.5383	0.0538	0.0538					
GRIGG™ Aminoplex®	1.160	9.681	2.00	3.0%														
		lbs of Nutrient per gal:		0.2904														
GRIGG™ A-O-K®	1.260	10.515	7.60	1.0%		24.0%												
		lbs of Nutrient per gal:		0.1052		2.5237												
GRIGG™ Bio Blend™	1.320	11.016	1.00	10.0%			5.000%											
		lbs of Nutrient per gal:		1.1016			0.5508											
GRIGG™ Burley Green®	1.480	1.190	8.80	18.0%	2.0%	3.0%				0.050%								
		lbs of Nutrient per gal:		1.7876	0.1986	0.2979				0.0050								
GRIGG™ Carboplex®	1.370	11.433	3.30	6.0%	4.0%	4.0%				0.200%	0.050%	0.050%						
		lbs of Nutrient per gal:		0.6860	0.4573	0.4573				0.0229	0.0057	0.0057						
GRIGG™ Displace®	1.480	12.350	0.75				12.000%											
		lbs of Nutrient per gal:					1.4820											
GRIGG™ Fairphyte®	1.480	12.351	6.70	1.0%		26.0%												26.000%
		lbs of Nutrient per gal:		0.1235		3.2113												3.2113
GRIGG™ Fe Chelate 5%	1.340	11.183	2.70							5.000%								
		lbs of Nutrient per gal:								0.5591								
GRIGG™ Gary's Green®	1.290	10.766	2.90	18.0%	3.0%	4.0%		0.500%		1.000%	0.100%	0.100%	0.120%					
		lbs of Nutrient per gal:		1.9378	0.3230	0.4306		0.0538		0.1077	0.0108	0.0108	0.0129					
GRIGG™ Gary's Green Ultra®	1.280	10.682	3.70	13.0%	2.0%	3.0%		0.500%		1.400%	0.200%	0.200%	0.120%					
		lbs of Nutrient per gal:		1.3887	0.2136	0.3205		0.0534		0.1495	0.0214	0.0214	0.0128					
GRIGG™ Iron Combo Chelate	1.430	11.934	2.70	1.0%		2.0%			1.000%	4.500%	1.000%	1.000%	0.130%	0.160%				
		lbs of Nutrient per gal:		0.1193		0.2387			0.1193	0.5370	0.1193	0.1193	0.0155	0.0191				
GRIGG™ Kelplex™	1.100	9.180	4.54	1.0%	2.0%	2.0%												
		lbs of Nutrient per gal:		0.0918	0.1836	0.1836												
GRIGG™ Manganese Combo	1.350	11.266	2.38					1.200%			5.000%	1.000%	0.400%					
		lbs of Nutrient per gal:						0.1352			0.5633	0.1127	0.0451					
GRIGG™ Mg Chelate 5%	1.230	10.265	0.60					5.000%										
		lbs of Nutrient per gal:						0.5132										
GRIGG™ Micro Burst™	1.350	11.099	2.00			1.0%		0.300%		3.400%	2.400%	2.500%	0.050%	0.040%		0.010%		
		lbs of Nutrient per gal:				0.1110		0.0333		0.3774	0.2664	0.2775	0.0055	0.0044		0.0011		
GRIGG™ Nutra Green™	1.370	11.433	2.50	5.0%	10.0%	5.0%		1.000%		1.000%	0.500%	0.100%	0.100%	0.120%				
		lbs of Nutrient per gal:		0.5717	1.1433	0.5717		0.1143		0.1143	0.0572	0.0114	0.0114	0.0137				
GRIGG™ P-K Plus®	1.370	11.433	7.05	3.0%	7.0%	18.0%								0.020%		0.001%	0.010%	14.000%
		lbs of Nutrient per gal:		0.3430	0.8003	2.0580								0.0023		0.0001	0.0011	1.6006
GRIGG™ Rhizonify®	1.280	10.682	3.74	6.0%	4.0%	4.0%				0.200%	0.050%	0.050%						
		lbs of Nutrient per gal:		0.6409	0.4273	0.4273				0.0214	0.0053	0.0053						
GRIGG™ Sili-Kal B™	1.470	12.268	1.50	8.0%		4.0%	10.000%							0.050%	0.010%			
		lbs of Nutrient per gal:		0.9814		0.4907	1.2268							0.0061	0.0012			
GRIGG™ Suprema®	1.310	10.932	6.30	12.0%		12.0%				1.000%	0.050%	0.050%		0.005%				
		lbs of Nutrient per gal:		1.3119		1.3119				0.1093	0.0055	0.0055		0.0005				
GRIGG™ Tuff Turf®	1.310	10.932	4.30	1.0%		14.0%		0.500%		0.500%	0.500%			0.050%				
		lbs of Nutrient per gal:		0.1093		1.5305		0.0547		0.0547	0.0547			0.0055				
GRIGG™ Ultraplex®	1.280	10.682	2.90	4.0%		3.0%		0.500%		2.000%	0.400%	0.400%	0.050%	0.050%				
		lbs of Nutrient per gal:		0.4273		0.3205		0.0534		0.2136	0.0427	0.0427	0.0053	0.0053				
GRIGG™ Zinc 5%	1.280	10.682	0.90									5.000%						
		lbs of Nutrient per gal:										0.5341						

# FOLIAR ANALYSIS SUMMARY

## Metric

			Nutrient Content														
Liquids	kg per 1.00 L	pH	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Ca	Mg	S	Fe	Mn	Zn	Cu	B	Si	Mo	Co	HPO <sub>3</sub>
GRIGG™ Amino Iron®	1.290	2.50	12.0%						5.000%	0.500%	0.500%						
	kg of Nutrient per L:		0.1548						0.0645	0.0064	0.0064						
GRIGG™ Aminoplex®	1.160	2.00	3.0%														
	kg of Nutrient per L:		0.0348														
GRIGG™ A-O-K®	1.260	7.60	1.0%		24.0%												
	kg of Nutrient per L:		0.0126		0.3024												
GRIGG™ Bio Blend™	1.320	1.00	10.0%			5.000%											
	kg of Nutrient per L:		0.1320			0.0660											
GRIGG™ Burley Green®	1.480	8.80	18.0%	2.0%	3.0%												
	kg of Nutrient per L:		0.2142	0.0238	0.0357												
GRIGG™ Carboplex®	1.370	3.30	6.0%	4.0%	4.0%				0.200%	0.050%	0.050%						
	kg of Nutrient per L:		0.0822	0.0548	0.0548				0.0027	0.0007	0.0007						
GRIGG™ Displace®	1.480	0.75				12.000%											
	kg of Nutrient per L:					0.1776											
GRIGG™ Fairphyte®	1.480	6.70	1.0%		26.0%												26.000%
	kg of Nutrient per L:		0.0148		0.3848												0.3848
GRIGG™ Fe Chelate 5%	1.340	2.70							5.000%								
	kg of Nutrient per L:								0.0670								
GRIGG™ Gary's Green®	1.290	2.90	18.0%	3.0%	4.0%		0.500%		1.000%	0.100%	0.100%	0.120%					
	kg of Nutrient per L:		0.2322	0.0387	0.0516		0.0064		0.0129	0.0013	0.0013	0.0015					
GRIGG™ Gary's Green Ultra®	1.280	3.70	13.0%	2.0%	3.0%		0.500%		1.400%	0.200%	0.200%	0.120%					
	kg of Nutrient per L:		0.1664	0.0256	0.0384		0.0064		0.0179	0.0026	0.0026	0.0015					
GRIGG™ Iron Combo Chelate	1.430	2.70	1.0%		2.0%			1.000%	4.500%	1.000%	1.000%	0.130%	0.160%				
	kg of Nutrient per L:		0.0143		0.0286			0.0143	0.0643	0.0143	0.0143	0.0019	0.0023				
GRIGG™ Kelplex™	1.100	4.54	1.0%	2.0%	2.0%												
	kg of Nutrient per L:		0.0110	0.0220	0.0220												
GRIGG™ Manganese Combo	1.350	2.38					1.200%			5.000%	1.000%	0.400%					
	kg of Nutrient per L:						0.0162			0.0675	0.0135	0.0054					
GRIGG™ Mg Chelate 5%	1.230	0.60					5.000%										
	kg of Nutrient per L:						0.0615										
GRIGG™ Micro Burst™	1.330	2.00			1.0%		0.300%		3.400%	2.400%	2.500%	0.050%	0.040%		0.010%		
	kg of Nutrient per L:				0.0133		0.0040		0.0452	0.0319	0.0332	0.0007	0.0005		0.0001		
GRIGG™ Nutra Green™	1.370	2.50	5.0%	10.0%	5.0%		1.000%		1.000%	0.500%	0.100%	0.100%	0.120%				
	kg of Nutrient per L:		0.0685	0.1370	0.0685		0.0137		0.0137	0.0068	0.0014	0.0014	0.0016				
GRIGG™ P-K Plus®	1.370	7.05	3.0%	7.0%	18.0%								0.020%		0.001%	0.010%	14.000%
	kg of Nutrient per L:		0.0411	0.0959	0.2466								0.0003		0.0000	0.0001	0.1918
GRIGG™ Rhizonify®	1.280	3.74	6.0%	4.0%	4.0%				0.200%	0.050%	0.050%						
	kg of Nutrient per L:		0.0822	0.0548	0.0548				0.0027	0.0007	0.0007						
GRIGG™ Sili-Kal B™	1.470	1.50	8.0%		4.0%	10.000%							0.050%	0.010%			
	kg of Nutrient per L:		0.1176		0.0588	0.1470							0.0007	0.0001			
GRIGG™ Suprema®	1.310	6.30	12.0%		12.0%				1.000%	0.050%	0.050%		0.005%				
	kg of Nutrient per L:		0.1572		0.1572				0.0131	0.0007	0.0007		0.0001				
GRIGG™ Tuff Turf®	1.310	4.30	1.0%		14.0%		0.500%		0.500%	0.500%				0.050%			
	kg of Nutrient per L:		0.0131		0.1834		0.0065		0.0065	0.0065				0.0007			
GRIGG™ Ultraplex®	1.280	2.90	4.0%		3.0%		0.500%		2.000%	0.400%	0.400%	0.050%	0.050%				
	kg of Nutrient per L:		0.0512		0.0384		0.0064		0.0256	0.0051	0.0051	0.0006	0.0006				
GRIGG™ Zinc 5%	1.280	0.90									5.000%						
	kg of Nutrient per L:										0.0640						

# GRIGG™ APPLICATION GUIDELINES

## Fundamental Instructions for Applications and Programs

### Very Important

Most liquid products are designed to be foliar absorbed. For maximum performance, apply early in the morning or late in the evening with 1-2 gallons of water per 1,000 sq ft (300-600 L / Ha). Allow the application to dry on plant 3-6 hours before watering.

### Surfactants

GRIGG™ Ultraplex® is a foliar nutrition product that contains a non-ionic organic surfactant and no additional surfactant is necessary when using this product. Ultraplex is also an effective water buffering agent designed to resist large changes in spray tank pH. It is a critical foundation product and should be the first thing added to the water of your spray tank mix. The recommended rate for Ultraplex is 3 fl oz per 1000 sq ft (10 L / Ha). Ultraplex may be used with other manufacturers' products to increase their overall compatibility and spray efficiency.

### Compatibility

GRIGG™ Proven Foliar® nutrients are compatible with each other and most fungicides, herbicides, and pesticides when tank mixed at recommended rates. A jar test is always recommended as a part of standard operating procedure. The high degree of compatibility of the Proven Foliar line includes the ability to be mixed with other foliar applied fungicides, insecticides and herbicides that do not need to be watered in. When mixing with herbicides, consider using the lowest label rate as GRIGG products may enhance the uptake of the herbicide.

### Rates

Unless otherwise stated, the rates expressed in GRIGG nutrition programs are expressed as Fluid Ounces Per 1,000 square feet with Litres Per Hectare equivalents. To convert 14 day programs to 7 day programs lower rates by one third (1/3).

### Minors

GRIGG straight chelated nutrients or any other Proven Foliar nutrient can be added to any program as indicated by soil and tissue test results. Typical rates for adding individual micronutrients range between 1-3 fl oz per 1,000 sq ft (3-10 L / Ha). For severe deficiencies, as much as 6 fl oz per 1,000 sq ft (20 L / Ha).

### Soils Bio-Amendment Program

For sand based greens, use 1 gallon per acre (10 L / Ha) of GRIGG™ Bio Blend™ and 4 gallons per acre (40 L / Ha) of GRIGG™ Carboplex® applied monthly and lightly watered in. For soil based greens use 1/2 gallon per acre (5 L / Ha) of Bio Blend and 2 1/2 gallons per acre (25 L / Ha) of Carboplex.

### Program Balance

GRIGG Proven Foliar nutrients are an effective method of providing nutrients to the plant. However, we also recommend using GRIGG™ GreenSpec® granular nutrients in the spring and fall as determined by soil testing to complete a total program.

No other brand of products has been proven to enhance the performance of any GRIGG products.

### Intervals

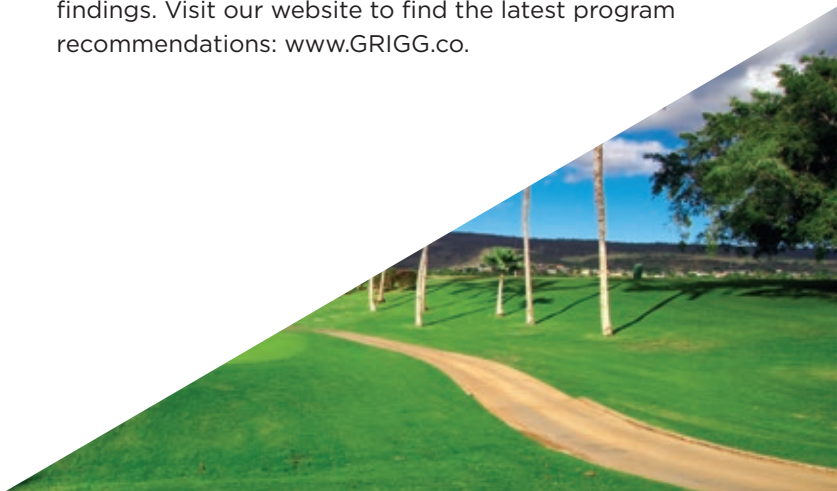
Unless otherwise stated, GRIGG nutrition programs should typically be applied every 7-14 days. There is flexibility to accommodate differing management styles and between 1 to 3 weeks is acceptable if rates are adjusted accordingly.

### Expertise

If you want to create site-specific programs that are tailored to the individual needs and unique factor of a site, contact your distributor or GRIGG technical representative today.

### Research

GRIGG is committed to participating in ongoing independent university research trials. Our agronomists adjust recommended rates and other application guidelines in accordance with the most recent research findings. Visit our website to find the latest program recommendations: [www.GRIGG.co](http://www.GRIGG.co).



# TOURNAMENT NUTRITION PROGRAM

## Shorter Grass, Shorter Roots

To produce faster greens during tournament preparation, turf is continually cut to lower heights. It is challenging to maintain tournament conditions, whether for a special event or year around. Superintendents must promote density and quality while producing fast greens.

As industry standard mowing heights are lowered, root growth decreases. Current tournament mowing heights are typically below 1/8 inch (3-4 mm) on both cool and warm season turf. During a special event greens are often double cut in the morning and cut again in the afternoon or evening.

In order to satisfy the wants of golfers for green speed during tournament play or any other time, superintendents simply cut their greens so low and so often that there is very limited leaf surface to photosynthesize.

During photosynthesis, chloroplasts and chlorophyll use sunlight, carbon dioxide and water to yield carbohydrates, oxygen and water. These carbohydrates are utilized by the plant to sustain growth and life functions as well as stored in the roots for reserve.

Roots are not photosynthetic and are 100% dependent on the photosynthetic energy captured in the leaves and shoots. The amount of energy captured depends on:

- The duration of light
- The extent of stress
- The amount of leaf surface

## Maintaining Nutrient Level and Health

In an ordinary situation a turf plant will store half of all the carbohydrates produced in the root and utilize half for sustaining life functions. Around half of that carbohydrate reserve in the root is then excreted back into the rhizosphere as a microbial food substance called exudates. These exudates are a combination of protein, carbohydrates and sugars; and these exudates sustain the life of the complex micro-community. The microbes in turn make nutrients in the soil available to the plant. This is the way mother nature intended to provide for the plant's needs.

Today's putting green mowed at 1/8 inch (3 mm) or less, regardless of season, simply cannot photosynthesize enough to ensure adequate carbohydrate reserves and storage. The turf is trying to survive and needs to utilize all the carbohydrates available to do it. Therefore the plant does a poor job of storing any carbohydrate reserve in the root.

While the genetics of bentgrass and Bermudagrass vary, there are fertility practices that the golf course superintendents can adopt to help turf survive and thrive even when it is being mowed so low. The management practices during this period of time will in large part determine the health of turfgrass. **One important practice is maintaining the nutrient level of the plant tissue.**

In addition to C, H and O<sub>2</sub>, which are provided by water and carbon dioxide, there are 13 essential nutrients required by all higher plants. Plant health, growth, and development are dependent on all of these elements being present at optimum concentrations. Many scientists believe that these 13 elements are critical to plant growth and survival during periods of stress.

## Nutrients Available Immediately

Because GRIGG™ Proven Foliar® nutrients penetrate the waxy cuticle of the leaf and are efficiently absorbed and translocated, its' nutrient utilization level is very high. Even in the best conditions (including foliar applied but root uptake products), common soil nutrient utilization is very low. Roots only come in contact with a small percentage of the soil. When soil temperatures are too high or too low, or soil pH is higher or lower than the optimum range, the plant is less able to take nutrients up through the roots even if available. N, Mg, S, Fe, Mn and Zn are critical nutrients needed for chlorophyll production and thus carbohydrate production. Calcium may also be in short supply as new root growth is restricted, even in a highly calcareous soil or when calcium is being supplied as a granular.

**Proven Foliar nutrients bypass typical problems of traditional nutrient applications since they are immediately available to the plant!**

**To initiate your tournament program, spray the following recommended products and rates every 7 days:**

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green®	6	20
GRIGG™ Ultraplex®	3	10
GRIGG™ Sili-Kal B™	3	10
Plus, every other spray:		
GRIGG™ P-K Plus®	6	20

## Nutrient Analysis

Based on the suggested rates, this simple and easy to use tournament mix supplies all nutrients needed for plant growth including those critical for photosynthesis. It also supplies a spreading agent for better leaf contact, a water buffer agent to bring the pH of the mix to the correct level for plant uptake, and contains biostimulants, sugars, phosphites and amino acids.

### GRIGG™ Gary's Green® 18-3-4

(lbs of nutrient per 1,000 ft<sup>2</sup> at 6 fl oz)

N	P	K	Mg	Fe	Mn	Zn	Cu
0.0908	0.0151	0.0202	0.0025	0.005	0.0005	0.0005	0.0006

(kg of nutrient per Ha at 20 L/Ha)

N	P	K	Mg	Fe	Mn	Zn	Cu
4.644	0.774	1.032	0.129	0.258	0.0258	0.0258	0.031

### GRIGG™ Ultraplex® 4-0-3

(lbs of nutrient per 1,000 ft<sup>2</sup> at 3 fl oz)

N	K	Mg	Fe	Mn	Zn	Cu	B
0.01	0.0075	0.0013	0.005	0.001	0.001	0.0001	0.0001

(kg of nutrient per Ha at 10 L/Ha)

N	K	Mg	Fe	Mn	Zn	Cu	B
0.512	0.384	0.064	0.256	0.0512	0.0512	0.0064	0.0064

### GRIGG™ Sili-Kal™ B 8-0-4

(lbs of nutrient per 1,000 ft<sup>2</sup> at 3 fl oz)

N	K	Ca	B	Si
0.023	0.0115	0.0288	0.0001	0.00003

(kg of nutrient per Ha at 10 L/Ha)

N	K	Ca	B	Si
1.176	0.0588	1.47	0.0073	0.00147

### GRIGG™ P-K Plus® 3-7-18 + Phosphite 14%

(lbs of nutrient per 1,000 ft<sup>2</sup> at 6 fl oz)

N	P	K	B	Mo	Co	Phosphite HPO <sub>3</sub>
0.0161	0.0375	0.0965	0.0001	0.00001	0.0001	0.075

(kg of nutrient per Ha at 20 L/Ha)

N	P	K	B	Mo	Co	Phosphite HPO <sub>3</sub>
0.822	1.918	4.932	0.0055	0.00027	0.00274	3.836

GRIGG chelated straight nutrients or any other Proven Foliar nutrients can be added to this program as indicated by soil and tissue test results. We also recommend the addition of GRIGG™ GreenSpec® fertilizer in the spring and again in the fall as determined by soil testing to complete a total program.

# TRANSITIONAL ZONE

## Bentgrass Nutrition Program

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

All foliar rates below are expressed as fluid ounces per 1,000 ft<sup>2</sup> with liters per hectare (L / Ha) equivalents unless otherwise noted.

All GRIGG™ GreenSpec® granular nutrient rates are expressed in lbs per 1,000 ft<sup>2</sup> with grams per meter squared.

### Coming out of winter: Mar-Apr every 7-10 days

GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Nutra Green	3	10
GRIGG™ Sili-Kal B™	3	10
GRIGG™ Ultraplex®	3	10

### One week prior to aeration: Apr – May

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green®	9	30
GRIGG Ultraplex	3	10
GRIGG Sili-Kal B	6	20

### At aeration: Apr – May

GRIGG™ GreenSpec®	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Seven Iron™ 7-7-7	10	40

### One week after aeration: Apr – May

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green	9	30

### Late Spring/Summer: Jun – Oct every 10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green	6	20
GRIGG™ P-K Plus®	3	10
GRIGG™ Tuff Turf®	3	10
GRIGG™ Manganese Combo	2	6
GRIGG™ Kelplex™	1	3

### Fall: Oct – Nov

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Tuff Turf or GRIGG™ A-O-K®	3	10
GRIGG Nutra Green	3	10
GRIGG Ultraplex	3	10
GRIGG Sili-Kal B	3	10

### Fall:

GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG Seven Iron 7-7-7	10	40

### Late Fall/Winter: Dec – Feb (weather permitting)

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Tuff Turf	3	10
GRIGG Ultraplex	3	10

# NEW ENGLAND

## Nutrition Programs

### Newer Generation Creeping Bentgrass Swards

#### Spring Green Up/Root Generation: (after 2nd mowing)

GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Nutra Green™	6	20
GRIGG™ Gary's Green® Ultra	6	20

#### If using in combination with \*Trimmit® add:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Micro Burst™	2	6

#### 5 days prior to aeration:

GRIGG™ GreenSpec®	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Seven Iron™ 7-7-7	10	40

#### Mid-Spring and into Summer:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Nutra Green	6	20
(P for energy transfer)		
GRIGG™ P-K Plus®	6	20
GRIGG™ Sili-Kal B™	4	15
GRIGG Gary's Green Ultra	12	40

#### Early Fall:

GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Turf Rally™ 16-4-8 (1 lb N)	6.25	25
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Tuff Turf®	6	20
GRIGG Nutra Green	6	20
GRIGG Gary's Green Ultra	9	30

#### Late Fall until just prior to dormancy:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Tuff Turf	6	20
GRIGG Gary's Green Ultra	6	20

\* Trimmit® is a registered trademark of the Syngenta® Corporation

### Annual Bluegrass and Creeping Bentgrass Swards

#### Spring green up/root generation: (after 2nd mowing)

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Nutra Green	6	20
GRIGG Gary's Green Ultra	9	30

#### If using in combination with PGR's for seed head suppression or Primo add:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Micro Burst	1	3

#### 5 days prior to aeration:

GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG Seven Iron 7-7-7	10	40

#### Mid-Spring and into Summer:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Tuff Turf	4	15
GRIGG P-K Plus	6	20
GRIGG Gary's Green Ultra	12	40

#### Early Fall:

GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Endurance™ 8-4-16	10	40
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Tuff Turf	6	20
GRIGG Nutra Green	6	20
GRIGG Gary's Green Ultra	9	30

#### Late Fall until just prior to dormancy:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Tuff Turf	6	20
GRIGG Gary's Green Ultra	6	20

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)



# DESERT

## Nutrition Programs

### Overseeding

At planting and/or after the 2nd or 3rd mowing of the seedling turf:		
GRIGG™ GreenSpec®	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Seven Iron™ 7-7-7	10	40
1-2 weeks later:		
GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ P-K Plus®	6	20
GRIGG™ Gary's Green® Ultra	6	20
1 - 2 months later, every 7 - 10 days:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG P-K Plus	6	20
GRIGG™ Gary's Green Ultra	6-9	20-30

Rate should start at 6 fl oz (20 L / Ha) and increase as the turf matures.

### Low/High Desert Bentgrass

Early Spring:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6	20
GRIGG™ Nutra Green™	4	15
GRIGG™ Sili-Kal B™	4	15
GRIGG™ Tuff Turf®	4	15
Late Spring:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6	20
GRIGG P-K Plus	6	20
GRIGG™ Kelplex™	1	3
Summer:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6	20
GRIGG P-K Plus	6	20
GRIGG Kelplex	1	3
GRIGG Tuff Turf	3	10
Fall:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6	20
GRIGG P-K Plus	6	20
GRIGG Tuff Turf	4	15
GRIGG™ Manganese Combo	2	6
Winter:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6	20
GRIGG Manganese Combo	2	6
GRIGG Nutra Green	4	15
GRIGG Sili-Kal B	4	15

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

# MID-ATLANTIC REGION

## Foliar and Granular Nutrition Programs

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

All foliar rates below are expressed as fluid ounces per 1,000 ft<sup>2</sup> with liters per hectare (L / Ha) equivalents unless otherwise noted.

All GRIGG™ GreenSpec® granular nutrient rates are expressed in lbs per 1,000 ft<sup>2</sup> with grams per meter squared.

### 3-5 days prior to aeration and the week of aeration:

GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Nutra Green™	6	20
GRIGG™ Gary's Green® Ultra	12	40

### One day after aeration and topdressing:

GRIGG™ GreenSpec®	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Seven Iron™ 7-7-7	10	40

### Late Spring / early Fall: every 7-10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6	20
GRIGG Nutra Green	3	10
GRIGG™ Sili-Kal B™	3	10

### Summer:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6	20
GRIGG™ Tuff Turf® or A-O-K®	3	10
GRIGG™ P-K Plus®	6	20
GRIGG™ Manganese Combo	3	10

### Applied in the "off" weeks:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Carboplex®	6	20
GRIGG™ Kelplex™	1	3

### Late Fall / Winter: mid-October to mid-November every 7-10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6	20
GRIGG Tuff Turf	6	20
GRIGG Carboplex	6	20

# GREAT LAKES REGION

## Nutrition Programs

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

All foliar rates below are expressed as fluid ounces per 1,000 ft<sup>2</sup> with liters per hectare (L / Ha) equivalents unless otherwise noted.

All GRIGG™ GreenSpec® granular nutrient rates are expressed in lbs per 1,000 ft<sup>2</sup> with grams per meter squared.

### Spring aeration: 5-7 days prior to aeration

GRIGG™ GreenSpec®	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Seven Iron™ 7-7-7	10	40

### Spring: Mar - Apr every 7-10 days

GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Nutra Green™	6	20
GRIGG™ Ultraplex®	6	20

### Late Spring: Apr - May every 7-10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green® Ultra	6-9	20-30
GRIGG™ P-K Plus®	6	20

### Summer: June - Aug every 7-10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	6-9	20-30
GRIGG P-K Plus	6	20
GRIGG™ Kelpex™	1.5	5

### Fall: Sept - Nov every 7-10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Ultraplex	3	10
GRIGG P-K Plus or GRIGG™ Tuff Turf®	6	20
GRIGG™ Carboplex®	6	20

### Fall aeration: 5-7 days prior to aeration

GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG Seven Iron 7-7-7	10	40

# BERMUDA GRASS

## Nutrition Programs

### Southern

Every spray:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green	2-6	10-20
GRIGG Ultraplex	3	10
GRIGG™ Manganese Combo	2	6

Plus, every other spray:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG P-K Plus	6	20

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

### Low Desert

Early Spring:		
GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Ultraplex®	3	10
GRIGG™ Nutra Green™	3	10
GRIGG™ Micro Burst™	2	6
GRIGG™ Sili-Kal B™	3	10

Late Spring transition:		
GRIGG™ GreenSpec®	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Seven Iron™ 7-7-7	7	30

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green® Ultra	9	30
GRIGG™ Tuff Turf®	3	10

Summer:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green®	9	30

Late Summer/early Fall:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ A-O-K®	6	20
GRIGG Sili-Kal B	3	10

Low desert overseeding:		
GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG Seven Iron 7-7-7	8-12	30-50

1-2 weeks following granular application, apply on 14 day rotation:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	3-9	10-30
<i>(Rate should start a 3 fl oz and increase as turf matures)</i>		
GRIGG™ P-K Plus®	6	20
GRIGG Nutra Green	6	20

Winter:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Ultraplex	3	10
GRIGG Nutra Green	3	10
GRIGG Micro Burst	2	6

# SPORTS TURF

## Nutrition Program

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

All foliar rates below are expressed as fluid ounces per 1,000 ft<sup>2</sup> with liters per hectare (L / Ha) equivalents unless otherwise noted.

All GRIGG™ GreenSpec® granular nutrient rates are expressed in lbs per 1,000 ft<sup>2</sup> with grams per meter squared.

### Spring foliar starter: every 7-10 days

GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Nutra Green™	4-6	15-20
GRIGG™ P-K Plus®	6	20
GRIGG™ Ultraplex®	4-6	15-20

### Cool season maintenance: every 7-10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green® Ultra	6-9	20-30
GRIGG P-K Plus	6	20
GRIGG™ Tuff Turf®	4-6	15-20
GRIGG™ Sili-Kal B™	4-6	15-20

### Warm season maintenance: every 7-10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Suprema®	6-12	20-40
GRIGG Ultraplex	3-6	10-20
GRIGG P-K Plus	6	20
GRIGG Tuff Turf	3-6	10-20
GRIGG™ Kelpex™	1-3	3-10

### Cool and warm soil conditioning: every 7-10 days

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Carboplex®	12	40
GRIGG™ Bio-Blend™	3	10

*Lightly water in or apply at 132-176 gal / acre*

# FLOWER FOLIAR FERTILITY

## Nutrition Program

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

All foliar rates below are expressed as fluid ounces per 1,000 ft<sup>2</sup> with liters per hectare (L / Ha) equivalents unless otherwise noted.

All GRIGG™ GreenSpec® granular nutrient rates are expressed in lbs per 1,000 ft<sup>2</sup> with grams per meter squared.

### Annual flowers: rotate products, drench every 7 days with one or the other

GRIGG™ Proven Foliar®	fl oz / gallon	L / Ha
GRIGG™ Nutra Green™	0.5	4
GRIGG™ P-K Plus®	0.5	4

### Annual flowers: drench every 14 days

GRIGG Proven Foliar	fl oz / gallon	L / Ha
GRIGG Nutra Green	0.5	4
GRIGG P-K Plus	0.5	4

### Annual flowers: drench every 14 days

GRIGG Proven Foliar	fl oz / gallon	L / Ha
GRIGG Nutra Green	1	8
GRIGG P-K Plus	0.5	4

# PACIFIC NORTHWEST/UK, IRELAND

## Nutrition Program

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

All foliar rates below are expressed as fluid ounces per 1,000 ft<sup>2</sup> with liters per hectare (L / Ha) equivalents unless otherwise noted.

All GRIGG™ GreenSpec® granular nutrient rates are expressed in lbs per 1,000 ft<sup>2</sup> with grams per meter squared.

Spring - Feb - Apr: every 10-21 days		
GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green® Ultra	9	30
GRIGG™ Nutra Green™	6	20

At Aeration:		
GRIGG™ GreenSpec®	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Seven Iron™ 7-7-7	10	40

Summer - May-Sept: every 10-21 days		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	9	30
GRIGG™ P-K Plus®	6	20
GRIGG™ Sili-Kal B™	3	10
GRIGG™ Micro Burst™	1	4

Late May:		
GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ All Natural Organic 6-5-6	12	45

Late June:		
GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG All Natural Organic 10-2-4	7	30

Fall - Sept-Nov: every 14-21 days		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	9	30
GRIGG P-K Plus	6	20
GRIGG™ Tuff Turf®	3	10

At aeration:		
GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG Seven Iron 7-7-7	10-15	40-60

Winter:		
GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Ultraplex®	3	10
GRIGG™ NH <sub>4</sub> Plus	6	20

# ROCKY MOUNTAIN REGION

## Nutrition Program

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

All foliar rates below are expressed as fluid ounces per 1,000 ft<sup>2</sup> with liters per hectare (L / Ha) equivalents unless otherwise noted.

All GRIGG™ GreenSpec® granular nutrient rates are expressed in lbs per 1,000 ft<sup>2</sup> with grams per meter squared.

### Spring: every 7-10 days

2-4 apps depending on turf conditions:

GRIGG™ Proven Foliar®	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green® Ultra	6-12	20-40
GRIGG™ Nutra Green™	6-12	20-40

### Late Spring: every 10-14 days

2-3 apps:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Gary's Green®	9	30
GRIGG Nutra Green	6	20
GRIGG™ Manganese Combo	2	6

### At aeration: every 7-10 days:

GRIGG™ GreenSpec®	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG™ Seven Iron™ 7-7-7	10	40
(0.7 lb N)		

### Summer: every 10-14 days:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG Gary's Green Ultra	9	30
GRIGG™ P-K Plus®	6	20
GRIGG™ Sili-Kal B™	3	10

### Late June:

GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG Seven Iron 7-7-7	7-10	30-40

### Fall: every 14 days:

GRIGG Proven Foliar	fl oz / 1,000 ft <sup>2</sup>	L / Ha
GRIGG™ Ultraplex®	6	20
GRIGG™ Tuff Turf®	3	10
GRIGG P-K Plus	3	20
GRIGG Manganese Combo	2	6

### Late Aug - Sept:

GRIGG GreenSpec	lbs / 1,000 ft <sup>2</sup>	g / m <sup>2</sup>
GRIGG Seven Iron 7-7-7	15	60



# NO PHOSPHOROUS SOLUTIONS

## Nutrition Program

Any program can be adjusted to your specific needs, and your micro climate.

Include GRIGG™ Markit-Blue™ spray pattern indicator to each tank load at 16-32 oz per 100 gallons of mix (125-250 ml/100 L)

All foliar rates below are expressed as fluid ounces per 1,000 ft<sup>2</sup> with liters per hectare (L / Ha) equivalents unless otherwise noted.

All GRIGG™ GreenSpec® granular nutrient rates are expressed in lbs per 1,000 ft<sup>2</sup> with grams per meter squared.

<b>Spring:</b>		
<b>GRIGG™ Proven Foliar®</b>	<b>fl oz / 1,000 ft<sup>2</sup></b>	<b>L / Ha</b>
GRIGG™ Ultraplex®	4	15
GRIGG™ Suprema®	12	40
GRIGG™ A-O-K®	6	20
GRIGG™ Manganese Combo	2	6

<b>At aeration:</b>		
<b>GRIGG™ GreenSpec®</b>	<b>lbs / 1,000 ft<sup>2</sup></b>	<b>g / m<sup>2</sup></b>
GRIGG™ Zerophos® 7-0-14	10	40
Or as needed per N requirements		

<b>Summer:</b>		
<b>GRIGG Proven Foliar</b>	<b>fl oz / 1,000 ft<sup>2</sup></b>	<b>L / Ha</b>
GRIGG Ultraplex	4	15
GRIGG Suprema	9	30
GRIGG™ Fairphyte®	3	10
GRIGG™ Sili-Kal B™	4	12

<b>Monthly</b>		
<b>GRIGG GreenSpec</b>	<b>lbs / 1,000 ft<sup>2</sup></b>	<b>g / m<sup>2</sup></b>
GRIGG™ C K-Balance™ 0-0-24	3	15
Or		
GRIGG™ S K-Balance™ 0-0-24	3	15

<b>Fall:</b>		
<b>GRIGG Proven Foliar</b>	<b>fl oz / 1,000 ft<sup>2</sup></b>	<b>L / Ha</b>
GRIGG Ultraplex	4	15
GRIGG Suprema	12	40
GRIGG™ Tuff Turf®	6	20

<b>At aeration:</b>		
<b>GRIGG GreenSpec</b>	<b>lbs / 1,000 ft<sup>2</sup></b>	<b>g / m<sup>2</sup></b>
GRIGG Zerophos 7-0-14	10	40

# AGRONOMISTS AND TECHNICAL SUPPORT

## **Gary Grigg, CGCS, MG Agronomist**

Gary has lead GRIGG's turf research, product development and agronomic practices since the company was founded in 1995. Gary has almost 50 years of experience in turfgrass and golf course management, and has been able to work with some of the highest ranked golf courses in the world. His turfgrass agronomic experience includes pre-construction, construction, grow-in, renovation, tournament preparation and daily maintenance. Gary holds a B.S. degree in Agriculture and Entomology from Utah State University and an M.S. degree in Agronomy from Michigan State University.

## **Gordon Kauffman, Ph.D. Technical Manager**

Dr. Kauffman has been working in the turfgrass industry for 20 years and oversees all turf research and product development for GRIGG and BRANDT. He holds a Ph.D. and M.S. in agronomy, as well as a B.S. degree in Turfgrass Management, from Penn State University. His graduate work focused on nutrient and soil loss in runoff after core cultivation and assessing the heat stress physiology of cool season grasses treated with plant growth regulators (PGR's) and biostimulants.

## **Brian Haschmeyer, Director of Discovery and Innovation**

Brian oversees all new formulation development and testing for BRANDT®, the parent company of GRIGG. He over oversees a staff of 15 chemists, research associates and agronomists. He holds a B.S. degree in Chemistry from Western Illinois University and has been with BRANDT since 2006.

# GRIGG™ TURF RESEARCH

GRIGG is dedicated to providing customers with the highest quality turf nutrition products in the industry, backed by plant nutrition science and research.

The company has conducted hundreds of university and independent turf product trials, with a focus on new product field testing. This research, along with plant science, drives all GRIGG fertility and IPM agronomic solutions, product recommendations and nutrition program.

**To see a full list of GRIGG research trials and reports, visit [www.GRIGG.co](http://www.GRIGG.co).**

# THREE BRANDS LEADING TURFGRASS HEALTH AND INNOVATION

BRANDT currently has three branded product lines sold into the turf market: GRIGG, BRANDT and BRANDT iHammer. Together, these three brands make up one of the most expansive turf and ornamental product lines on the market today – from foliar nutrition to adjuvants, bio-pesticides, pond dyes, water treatment solutions, tree care solutions, colorants and utility products.



GRIGG's high performance, high quality line of fertilizers provide exceptional nutrient uptake ability on turfgrass and is known as one of the premier specialty nutrition product lines for turf. The focus is on high quality products and agronomic support, backed by plant nutrition science and research.



BRANDT is a leading manufacturer and distributor of premium fertilizers, bio-pesticides and adjuvant technologies for the ag, turf and ornamental market, and lawn and garden markets. The company boasts a wide range nutrient efficiency enhancement products and one of the largest portfolios of OMRI Listed products available on the market. BRANDT has four manufacturing facilities in the U.S. and manufacturing plants in Brazil, Spain and Australia



Innovation Without Boundaries® BRANDT iHammer is a joint venture focused on the development of new product technologies that help plants use water and nutrients more efficiently, and enhance photosynthesis, carbon flow and glycoside sugar utilization within plants. Its products are currently available in the turf, greenhouse and agriculture markets.





Research Driven,  
Proven Results™

**For a distributor near you, contact:**

GRIGG: 1 888 246 8873

[www.grigg.co](http://www.grigg.co)

**GRIGG™ is part of Brandt Consolidated, Inc.**

2935 South Koke Mill Road

Springfield, IL 62711

[www.brandt.co](http://www.brandt.co)

Follow GRIGG on:

