

## NUTRITION PROGRAM

# TOURNAMENT PREPARATION

### 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-round. 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. Often during a special event greens are double cut in the morning and cut again in the afternoon or evening.



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

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.

### Maintaining Nutrient Levels

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 both the bentgrass and bermudagrass species vary, there are fertilization 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.

## Using GRIGG™ Proven Foliar® Nutrients to Provide Immediately Available Nutrition

Because GRIGG™ Proven Foliar® nutrients penetrate the waxy cuticle of the leaf and if efficiently absorbed and translocated, its' 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.

*GRIGG™ Proven Foliar® nutrients chelating technology and superior nutrient formulations bypass typical problems of traditional nutrient applications since our applied nutrients are immediately available to the plant!*

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

**GRIGG™ Gary's Green®** ..... **.6 fl oz / 1,000 ft<sup>2</sup>**  
(20 L / Ha)

**GRIGG™ Ultraplex®** ..... **.3 fl oz / 1,000 ft<sup>2</sup>**  
(10 L / Ha)

**GRIGG™ Sili-Kal B™** ..... **.3 fl oz / 1,000 ft<sup>2</sup>**  
(10 L / Ha)

*Plus, every other spray:*

**GRIGG™ P-K Plus®** ..... **.6 fl oz / 1,000 ft<sup>2</sup>**  
(20 L / Ha)

**Proven by scientific, independent and university testing, GRIGG™ products provide turf managers with a better method of fertilization and tournament preparation.**

**For a distributor near you contact:  
GRIGG: 1 888 246 8873 or [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)

## 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 and amino acids.

GRIGG™ Gary's Green® 18-3-4							
lbs of Nutrient per 1,000 ft <sup>2</sup> @ 6 fl oz							
N	P	K	Mg	Fe	Mn	Zn	Cu
0.0894	0.0149	0.0199	0.0025	0.005	0.0005	0.0005	0.0006
kg of Nutrient per Ha @ 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® 5-0-3							
lbs of Nutrient per 1,000 ft <sup>2</sup> @ 3 fl oz							
N	K	Mg	Fe	Mn	Zn	Cu	B
0.0123	0.0074	0.0012	0.0049	0.001	0.001	0.0001	0.0001
kg of Nutrient per Ha @ 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> @ 3 fl oz					
N	K	Ca	B	Si	
0.023	0.0115	0.0288	0.0001	0.00003	
kg of Nutrient per Ha @ 10 L/Ha					
N	K	Ca	B	Si	
1.176	0.588	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> @ 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 @ 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™ straight chelated nutrients or any other GRIGG Proven Foliar product can be added to this program as indicated by soil and tissue test results. We also recommend the addition of GRIGG™ GreenSpec™ granular nutrients in the spring and a fall as determined by soil testing to complete a total program.