GRIGG®

Research Driven,
Proven Results®

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 maintenance. 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, and are also 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 cut their greens low and the natural result is very limited leaf surface for photosynthesis.

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_2, 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 are efficiently absorbed and translocated, their utilization level is very high. Even in the best conditions soil nutrient utilization may be 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.

To initiate your tournament program, spray the following recommended products and rates every 7 days:		
GRIGG Proven Foliar	**fl oz/1,000 ft²**	**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

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

All foliar rates below are expressed as fluid ounces per 1,000 sq ft with liters per hectare [L/Ha] equivalents.

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.

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 - lbs of nutrient per gal:							
N	**P**	**K**	**Cu**	**Fe**	**Mg**	**Mn**	**Zn**
18.0% 1.9378	3.0% 0.3230	4.0% 0.4306	0.12% 0.0129	1.0% 0.1077	0.5% 0.0538	0.1% 0.0108	0.1% 0.0108
18.0% 1.9378	3.0% 0.3230	4.0% 0.4306	0.12% 0.0129	1.0% 0.1077	0.5% 0.0538	0.1% 0.0108	0.1% 0.0108

GRIGG Ultraplex - lbs of nutrient per gal:							
N	**K**	**B**	**Cu**	**Fe**	**Mg**	**Mn**	**Zn**
4.0% 0.4273	3.0% 0.3205	0.05% 0.0053	0.05% 0.0053	1.95% 0.208	0.5% 0.0534	0.4% 0.0427	0.4% 0.0427
4.0% 0.4273	3.0% 0.3205	0.05% 0.0053	0.05% 0.0053	1.95% 0.208	0.5% 0.0534	0.4% 0.0427	0.4% 0.0427

GRIGG Sili-Kal B - lbs of nutrient per gal:			
N	**K**	**Ca**	**B**
8.0% 0.9814	4.0% 0.4907	0.05% 0.0061	10.0% 1.2268

GRIGG P-K Plus - lbs of nutrient per gal:					
N	**P**	**K**	**B**	**Co**	**Mo**
3.0% 0.3430	5.0% 0.571	17.0% 1.943	0.02% 0.0023	0.01% 0.0011	0.001% 0.0001

For a distributor near you contact:
800 300 6559 or www.grigg.co

GRIGG is part of Brandt Consolidated, Inc.
2935 South Koke Mill Road
Springfield, IL 62711
www.brandt.co