

WE KNOW GRASS FROM THE BOTTOM UP.

Woodbury Chemical Company's roots are in Florida, and for over 15 years we've been servicing the golf course industry. We concentrate our business in Florida because we believe that's the best way to keep in close contact with our customers.

Florida's subtropical climate means special problems and our technological know-how can make the difference. We provide horticultural programs to insure strong, healthy, green grass.

You name it, we sell it. Pesticides, fertilizers, seed, and a complete line

of adjuvants.

Let our highly trained sales team work with you to individualize a program for your golf course. We

PRINCETON, FLORIDA

P.O. Box 4319
Princeton, FL 33032
(305) 258-0421
FLA. WATS 800-432-3411

BOYNTON BEACH, FLORIDA

Rt. 1, Box 278A
Boynton Beach, FL 33437
(305) 734-4441
Delray: (305) 449-4900
Deerfield: (305) 421-2393

competitively price our products and back it all up with reliable service.

If you've got a golf course... let Woodbury get to the root of it.

TAMPA, FLORIDA

P.O. Box 5016
Tampa, FL 33675
(813) 247-3621
Pinellas County: (813) 832-0017
FLA. WATS 800-282-2719

MT. DORA, FLORIDA

P.O. Box 1075
Mt. Dora, FL 32757
(904) 383-2146
FLA. WATS 800-342-9234



**PROFESSIONALS
AT WORK FOR YOU**



GOLF TURF NEWS

BRUCE J. AUGUSTIN
Extension Turf & Water Specialist
AREC Ft. Lauderdale

CHARLES H. PEACOCK
Extension Turf Specialist
Gainesville

The Importance Of Proper Turf Irrigation

Irrigation practices are a vital component of the overall golf course turf management program. There are numerous important factors which comprise turf irrigation practices, but in Florida one of the most critical irrigation factors is the quantity of water applied. Florida turf is subjected to numerous deficiencies because our sand soils have low water and nutrient holding capacities. These problems can be enhanced or reduced through irrigation practices.

Studies recently concluded at the Ft. Lauderdale Research and Education Center have examined the effects of irrigation on bermudagrass growth and nitrogen leaching. One of the studies evaluated the overall turf quality as influenced by irrigation during a four year period. One set of plots received daily irrigation and the other set of plots received irrigation on an 'as-needed basis' which was determined by tensiometers buried in the soil. Within each of the irrigation plots were sub-plots of dry granular applied ammonium nitrate or sulfur-coated urea. The plots were maintained under conditions similar to those on Florida golf course fairways. The turf plots were periodically rated for color on a 1 to 9 scale, with 9=best and 6=minimally acceptable.

The overall effect of water received by the plots can be seen in Table 1. During the wet season (June-October), rainfall combined with irrigation methods produced turf with significantly different appearances. The best turf resulted when irrigation was only applied as needed by the tensiometers. Daily irrigation and rainfall during the wet season resulted in excessive amounts of water being applied to the turf and caused poor turf due to fertilizer leaching. By limiting the water to only what the plant needs for growth, leaching can be minimized. In the dry season (November-May), both methods for scheduling irrigation worked equally well. This indicated neither method was supplying excessive amounts of water to the turf, since color ratings for both treatments were above the minimally acceptable level. The tensiometer treatment over the four year period saved between 42 and 95 percent of the water applied by conventional daily irrigation, depending on the rainfall frequencies and amounts.

The irrigation method can also influence the performance of nitrogen sources as shown in Table 2. During the wet

season no difference in turf color was noted between the water soluble (ammonium nitrate) and the slow-release (sulfur-coated urea) nitrogen sources. The main effect as indicated in Table 1 was the difference in water applied to the plots in the wet season. During the dry season there were performance differences between the nitrogen sources. The best turf was produced with sulfur-coated urea and daily irrigation. The other treatments produced turf with similar appearance. However if one considered the cost of water and fertilizer, the plots that received irrigation on an as needed basis and the water soluble nitrogen source probably were just as acceptable as the other treatments.

The general conclusion that can be drawn from this study is that we can grow turf with less water than many people think. By exploiting rainfall as much as possible, we can reduce the amount of irrigation that is applied to turf. Also by more carefully managing the irrigation, we can reduce nitrogen leaching and get better results from the cheaper, water soluble sources of nitrogen.

Table 1. Effects of irrigation method on turf color ratings during different seasons of the year.

Irrigation Method	Color Rating	
	Wet Season	Dry Season
Daily	6.7 a	7.1 a
Tensiometer	7.7 b	7.0 a

Values followed by the same letter are not significantly different.

Table 2. Effects of irrigation method and nitrogen source on the color rating of bermudagrass turf during the seasons.

Irrigation Method	Nitrogen Source	Color Rating	
		Wet Season	Dry Season
Daily	Sulfur-Coated Urea	6.8 a	7.4 a
Daily	Ammonium Nitrate	6.5 a	6.9 b
Tensiometer	Sulfur-Coated Urea	7.6 a	7.0 b
Tensiometer	Ammonium Nitrate	7.8 a	7.0 b

Values followed by the same letter are not significantly different. ■

**“If this pumping station ever fails
you can call me collect at
904/268-6707.”**

I'm Kent Curley and as president of AquaTurf I know the quality we build into every pumping station that leaves our plant.

“That's why I'm willing to back up our written warranties with a personal invitation to call me collect if you ever have a problem with an AquaTurf installation.

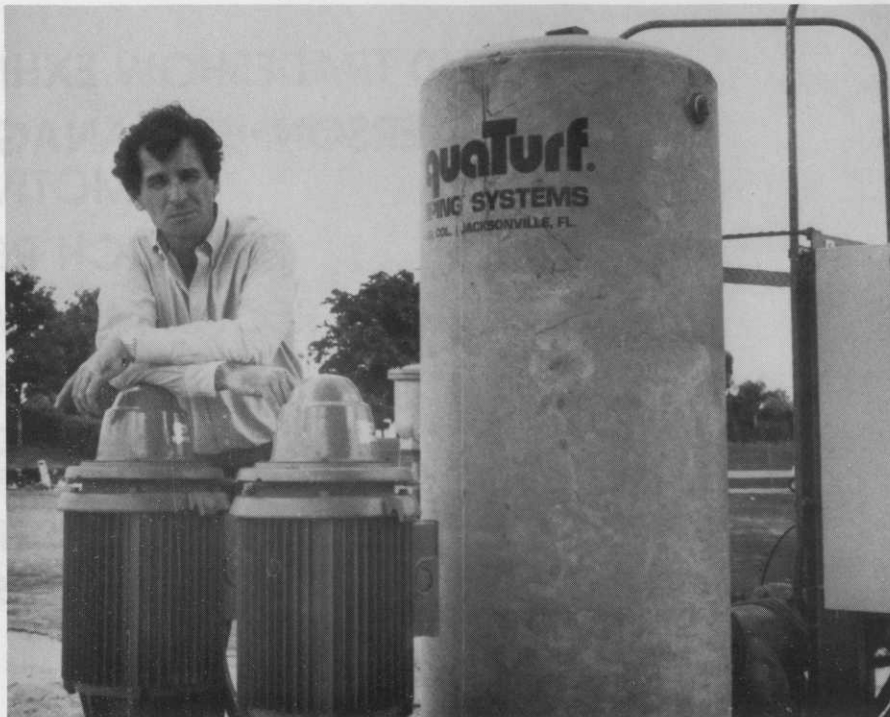
Strong words? You bet.

But satisfied customers from Miami to San Diego will tell you they're true.

“We'll even send you a list of our customers, along with complete information on AquaTurf's custom-designed pumping stations. Simply write AquaTurf. Or call and ask for Kent Curley. That way you'll know who I am if you ever need to reach me later.”

AquaTurf.

11363 SAN JOSE BOULEVARD, P.O. DRAWER 23518, JACKSONVILLE, FLORIDA 32217, 904/268-6707





FLORIDA
TURF-GRASS ASSOCIATION

CONFERENCE and SHOW

OCTOBER 1-3, 1984 • TAMPA FLORIDA
TURFGRASS SESSIONS: GOLF • LAWN CARE • PARKS & RECREATION



110 TRADESHOW EXHIBITORS
PERSONNEL MANAGEMENT
MOTIVATION
RESEARCH REPORTS
CURRENT RECOMMENDATIONS
HOT TOPICS:
Nematodes
Status of 2-4, D
Legislative Update
Lawn Diseases

For Program Registration or Hotel Information:
FLORIDA TURF-GRASS ASSOCIATION
302 SOUTH GRAHAM AVENUE
ORLANDO, FLORIDA 32803-6332
TELEPHONE 305-898-6721

Show
Curtis Hixon Convention Center
Conference
Hyatt Regency Tampa Hotel

Sunnyland Corporation Celebrates Birthday

On July 14, 1984, Sunniland Corporation based in Sanford, Florida, will celebrate its 100th anniversary. Actually formed as a chartered company under the name of Chase & Company, on May 14, 1884 by S.O. Chase, Sr. and Josh C. Chase. Sunniland has been a locally owned operation except for a brief period from 1979 to March of 1982 when it was owned by Reichold Ltd. of Canada and the name was changed to Sunniland Corporation, however in March of 1982, Lee. P. Moore purchased Sunniland from Reichold Ltd.

The company now has 6 building materials warehouses located throughout the state, distributing wholesale building materials and a fertilizer and chemical plant located at Five Points in Sanford, distributing and manufacturing Sunniland fertilizer and garden supplies over the state of Florida and to other Southern States.

Sunniland's corporate offices were located at 2nd and Oak avenues in Sanford for many years. After Mr. Moore's acquisition he moved the corporate offices to Five points where the fertilizer and chemical plants were already located. In July 1983, the Sanford based building materials department relocated to the Five points location as well. Now the Sanford based departments are all located in one beautiful setting at Five points. ■

get out of the water

Weeds grow all the time, even when you don't have time for them.

We specialize in aquatics. We have the people, the equipment, the know-how and the time to do it right.

When we manage your water and shoreline areas, you spend your time on more important things. You know that your lakes are in the best possible hands.

*Serving golf courses and green spaces
throughout Florida*

FLORIDA AQUATIC

Licensed/Insured/Bonded

1637 N.W. 38th Avenue
Ft. Lauderdale, FL 33311

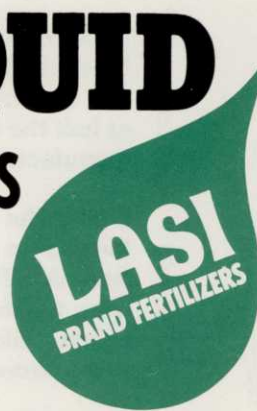
(305) 792-1500



LIQUID AG SYSTEMS INC.

Pompano Beach

Ft. Myers



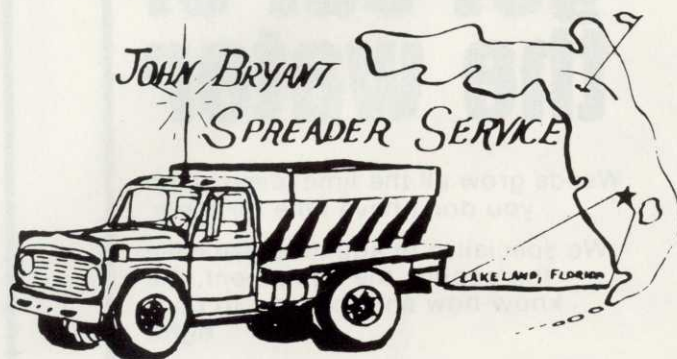
We take great pride in having developed the concepts and promoted the widespread acceptance of fertigation on turfgrass in Florida.

For over eleven years we have been at the leading edge of nutritional technology and TOTAL CONCEPT SERVICE, providing:

- ★ Highest quality, prescription mixed clear liquid fertilizers.
- ★ Dependable flow sensing, metering and injection systems.
- ★ Proven nutritional programs.

FLORIDA TOLL FREE NUMBER

FERTILIZER - LIME - DOLOMITE



PROMPT - QUALITY - SERVICE

813-687-9652 Home Unit 88.76 813-299-1181 Mobile

SPECIALIST
IN
GOLF COURSE SPREADING

Future Of Golf Tournament

The Palm Beach Chapter Golf Course Superintendents' Association held its third annual Future of Golf Tournament at The Golf and Racquet Club at Eastpointe on May 5th. 152 players challenged Gary Grump's immaculate golf course in a 4-man scramble, with Boca Grove's Steve Pearson, Roger Gamblin, Walt and Earl Christensian taking top honors with a 14-under par 56.

As its name implies, the purpose of the Future of Golf Tournament is to raise money for organizations which enhance and preserve the future of the game of golf. This year's proceeds, which totalled nearly \$6800, will go to the Palm Beach County Jr. Golf Association, the FTGA research fund, and the Palm Beach Jr. College golf team.

The success of this outstanding tournament is the result of the cooperation, hard work, and dedication of many individuals. Our special thanks to Tournament Director and host Superintendent Gary Grump and his staff; Director of Golf Bob Komarinetz; Head Golf Professional Donnie Schultz; Food and Beverage Manager Allan Herrmann; General Electric Credit Corp. and the members of The Golf and Racquet Club at Eastpointe for allowing us the use of their superb golfing facility. ■

MOCAP Approved

MONMOUTH JUNCTION, NJ. —MOCAP® 10% G Nematicide/Insecticide has received EPA approval for use on six additional surface and subsurface turf insects at half the current application rate, according to product manufacturer, Rhone-Poulenc, Inc.

Under the expanded label, MOCAP® 10% G is approved for use on Chinch Bug and the larvae of Black Turfgrass Ataenius Beetle, Bluegrass Billbug, Chinch Bug, European Chafer, Japanese Beetle and Sod Webworms. The product already holds a claim for use on Mole Crickets, and a broad cross section of nematodes.

The application rate for control of six additional insects is 1.25 pounds per 1,000 square feet or 50 pounds per acre on established turf. Application rate for nematode and Mole Cricket control remains unchanged.

"The expanded label shows MOCAP's ability to control a broad spectrum of insects, including grubs," says Mr. Dan Stahl, the Turf Products manager. "And the lower application rate makes the product more cost effective to use."

MOCAP® 10% G is approved only for use by Professional Turfmen. It is particularly well suited to insect and nematode control in lawncare, golf courses, sod farms, and cemeteries. For additional information on the turf use of MOCAP® 10% G contact, Rhone-Poulenc, Black Horse Lane, P.O. Box 125, Monmouth Junction, NJ. 08852. ■

BEAUT GREEN • PENETROL • KICK IN THE GRASS • TURF IRON • SUPER WET • EV R GREEN • TURF KOTE • WATER PENN • SCRAMP • KNOCK'M DED • GRIME OFF • GREEN LAPPING SOAP

ALMAR

Quality —
Service —
Economy —

CHEMICAL CO., INC.

P.O. BOX 18101

TAMPA, FLA. 33679

CALL COLLECT 813-839-3363



**From
Tee to Green
Get The Standard
of
Excellence**

Tee, Fairway, Green, or around the clubhouse. Whatever your needs for golf course accessories you'll find it at Standard Golf. Standard has the most complete line of accessories — all made with the top quality that Standard built its reputation on.

Get the finest for your course. Get the Standard of Excellence.

**STANDARD
GOLF** *Pro-Line*

Standard Golf Company
220 E. 4th St., Box 68
Cedar Falls, Iowa 50613
(319) 266-2638



Central Florida Crowfoots



By GARY MORGAN
Spruce Creek Golf and Racquet Club

Central Florida President

Joel Jackson, President of the Central Florida Golf Course Superintendents Chapter, is Superintendent at Walt Disney World's Lake Buena Vista Golf Course. The Lake Buena Vista course is the site of the Crowfoot Open Golf Tournament and also hosts with the other Disney courses, The Walt Disney World Classic, held in Mid-October and it is also a PGA Tour stop.

Joel's background is unique and indicates a hard working individual who wants to excel in all facets of the Golf Management Business.

Joel received his BA degree in Geology from the University of South Florida, then attended 1-1/2 years of graduate school at the University of South Florida again majoring in Geology. He served in the United States Coast Guard before starting his career in Golf Management. while at Apollo Beach G.C. in Tampa, he worked on the crew to build and plant the course. Joel then helped with golf course design and construction with "Ecogolf." He then worked for Pembroke Lake C.C. as a foreman for one year, before coming to work for Walt Disney World. He started at Disney as an hourly employee and has worked his way up to his present position of Superintendent.

As President of the Central Florida Chapter Joel has many goals that he hopes to accomplish as President. Joel believes that an important item in the chapter is increased participation from all members.

He will try to visit a lot of the courses in the chapter area that don't belong to the chapter. Through this he wants to upgrade the professionalism and the Superintendents image whgh he hopes will promote a more friendly atmosphere to expand the membership in the chapter.

Joel is a fine example of the modern Superintendent. In the Golf Management Business world we all need to follow Joel's example to better our profession.

NEW OFFICERS

- Joel Jackson, President Walt Disney World
- Joe Ondo, V. Pres., internal Winter Pines GC
- Ron Andrews, V. Pres., external Sun Tree CC
- John Yancey, Secy./Treas. Deland GC
- Gary Morgan (Past Pres.), Director Spruce Creek G&RC
- Jim Ellison, Director Bay Hill GC
- Larry Kamphaus, Director Walt Disney World
- Bob Williams, Director Indigo Lakes GC
- Dwight "Butch" Singo, Director Big Cypress GC
- Dennis Parker, Director Cape Orlando GC

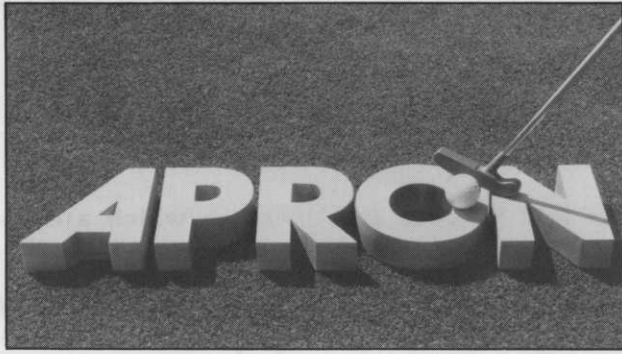
LANTANA PEAT & SOIL

1123 State Road 7
Boynton Beach, Fla.

732-4116
1-800-433-5552

STERILIZED SOILS • TOP DRESSING
TOP SOIL • MULCH • POTTING SOIL

"Keeping Golf Courses Green"



Systemic Seed Treatment Fungicide controls *Pythium* up to 21 days.

Apron® and Subdue® are Reg. TM.'s of CIBA-GEIGY

Apron®, a systemic seed treatment fungicide from Ciba-Geigy, works on contact to control *Pythium* on the outer surface of turfgrass seed.

As the seed starts to germinate, Apron is systemically translocated throughout the entire growing seedling. This assures you of maximum emergence and seedling establishment for up to 21 days after planting.

Because Apron is a systemic fungicide, you get better and longer *Pythium* control. And surprisingly, it costs no more than the ordinary seed treatment being used today.

After seedlings are established, you should follow up with fungicide treatments of Subdue® to maintain *Pythium* control in turf.

Call your seed distributor and ask for Apron treated turfgrass seed for this year's overseeding.

Gustafson 

17400 Dallas North Parkway
Dallas, Texas 75252
(214) 931-8899

"In this day and age, a golf course superintendent has to be an educated scientist, agronomist, an economist and a good people manager.

"If you put all this together with a love for a piece of earth, then you've got a good golf course superintendent."

TOM WATSON



GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

1617 ST. ANDREWS DRIVE / LAWRENCE, KANSAS 66044 / A.C. 913-841-3240

"What's The Difference Anyway"

By ROBERT A. MOORE
Aquatrols Corp. of America
talk given at

Temple Terrace Country Club, Tampa, FL, 4/19/83

I really appreciate this opportunity to clear away some of the confusion that often surrounds the sale and use of wetting agents.

I want to replace the "Miracles and Mystery" with Results and Reasons.

In addition I hope to leave you with enough information to make you a "Wise Buyer" of these materials.

The First point of confusion seems to be the use of so many different names — adjuvant, surfactant, spreader, sticker, penetrant, wetting agent and so forth.

Let's look at these names and explain their meaning, use, and relationship to each other.

The first name to define is adjuvant. This is the most general of all the terms. The chemical dictionary definition states: "A subsidiary ingredient or additive in a mixture which contributes to the effectiveness of the primary ingredient." So anything

you add to your treatment — which are usually sprays — and as long as it increases the performance, that product is an ADJUVANT. One example would be a chelating material that can improve a chemical's availability. Another would be surfactant materials and there are many other cases.

In your field of work, spraying chemicals, most of the adjuvants you would use would fall in the class of SURFACTANTS. The word surfactant comes from a contraction of "Surface-Active-Agent." The chemical dictionary definition of a surfactant is: "Any compound that reduces surface tension when dissolved in water or water solutions; or which reduces interfacial tensions between two liquids, or between a liquid and a solid." This again is a very general term, and covers a multitude of materials.

There are three categories of surfactants:

- 1) Detergents
- 2) Emulsifiers
- 3) Wetting Agents

All have the same basic chemical mechanism and differ chiefly in their behavior as a result of the nature of the surface or surfaces treated. In addition to these behavioral differences, where living tissues are involved, as they are in your field of work, you must also consider the effect of various surfactant types on phytotoxicity.

At this point let me give you a little demonstration:

—Demonstration—

"An adjuvant, in this case a surfactant, that contributes to the effectiveness of the primary ingredient." This example: Better wetting by the Water! For this demonstration, actually all types of surfactant material would work — some more than other. So don't be lead astray by simple demonstrations alone. Demonstrations do prove a point; that water can be changed and your programs can be made more effective. But you must also remember that you have to consider toxicity to the plant as well as that part of the definition made earlier: "Surfactants behavior differ chiefly as a result of the nature of the surface or surfaces involved." I want to again emphasize that the main point is that the water has been changed. By use of these materials one can improve the effectiveness of your sprays, your fertilizing, and your waterings.

Each of these categories of surfactants can further be separated into:

- (1) Anionic
- (2) Cationic
- and (3) Non-Ionic

(Continued on page 21)



SERVING ALL OF FLORIDA

with

INSECTICIDES, HERBICIDES, FUNGICIDES
& APPLICATION EQUIPMENT



"DESIGNED
FOR
THE TURF
INDUSTRY!"

**SOUTHERN MILL CREEK
PRODUCTS CO., INC.**

Dade
635-0321

Tampa Office
1-800-282-9115

Florida wats
1-800-432-8717