# ON THE GREEN, "ALMOST" DOESN'T CUT IT.

# Jacobsen® Eclipse® 322: the industry's only 100% hydraulic-free riding greens mower.

When we say no hydraulics, we mean it. The Jacobsen Eclipse 322 provides greener operations and less maintenance to lower operating costs by up to 86%. Combined with programmable settings and individual reel control, you're assured perfectly manicured greens every single time. **Determine your course savings using our cost calculator at www.Eclipse322.com.** 



5101 Gateway Blvd. - Lakeland, FL. 33811 (800) 330-8874 • (863) 665-5800 • FAX: (863) 667-0888 www.golfventuresonline.com





The Official Turf Equipment Supplier to The PGA of America and The Exclusive Turf Equipment Supplier to PGA Golf Properties. © May 2510, Jacobsen: A Testron Company.



#### FOREWORDS

## The Florida Green

Fall 2010

Published four times a year: On the 25th of January, April, July and October

> EDITOR Joel Jackson, CGCS 6780 Tamarind Circle Orlando, FL 32819 407-248-1971 voice/fax FLGRN@aol.com

PUBLICATIONS CHAIR Mark Kann U. of Florida/IFAS 2556 W. Hwy 318 Citra, FL 32113 352-591-2678, Ext. 218

EDITOR EMERITUS Dan Jones, CGCS Oviedo

**COPYRIGHT NOTICE:** Copyright 2010, Florida Golf Course Superintendents Association. All rights reserved. May not be reproduced in whole or in part without written permission of the FGCSA. EXCEPTION: Official publications of all golf course superintendent associations affiliated with the Golf Course Superintendents Association of America are welcome to use any material contained herein provided they give credit and copyright notice.

**SUBSCRIPTIONS:** \$20 for four issues. Contact the FGCSA office.

ADVERTISING: For rates and information, contact the FGCSA office at 800-732-6053

**EDITORIAL:** All inquiries should be directed to the editor, Joel Jackson, CGCS. Unsolicited manuscripts and photographs cannot be returned.

**ABOUT THE USE OF TRADE NAMES:** The use of trade names in this magazine is solely for the purpose of providing specific information and does not imply endorsement of the products named nor discrimination against similar unnamed products. It is the responsibility of the user to determine that product use is consistent with the directions on the label.

#### CONTENTS

- **2** Spotlight
- **8** COVER STORY
- **18 HANDS ON**
- **26** INDUSTRY NEWS
- **34** Stewardship

#### **40** Afterwords

President's Message	
FGCSA Officers & Directors	2
Calendar	4
Course Facts	14
Super Tip	24
Green Section Update	30
Green Side Up	40
Advertiser Index	40

**ON THE COVER:** #2 at sunrise. Coral Creek Club, Placida. Photo by Daniel Zelazek

## Meeting the Challenges

It is with great honor and humility that I begin my service as President of the Florida Golf Course Superintendents Association. I look forward to continue working with the Board of Directors and our Executive Director, Joel Jackson and our Association Manager, Jennifer Innes. I follow a long list of special golf course superintendents who have served as president of FGCSA. I want to thank our outgoing Past President Shane Bass and our Immediate Past President Bill Kistler for their dedicated service to the FGCSA.

I am proud to be a golf course superintendent. I believe it is one of the greatest professions a person can pursue. Whenever I get the opportunity to speak with young people that are considering a golf or landscape career, I always speak with pride about our profession and try to encourage their interest.

This is a challenging time not only for those who maintain golf courses but, the golf industry as a whole. Due to the economy and other factors we have seen rounds decrease over that past several years. Many of our clubs are asking us to reduce costs without sacrificing conditions. We are facing even more challenges from local municipal ordinances to national environmental groups with regards to water, fertilizer and pesticide use. As a group, we must work together to help strengthen the golf industry and educate the public with regards to these issues.

I recently sat on a Golf Summit panel discussion at the Florida Club Managers Association Conference. The panel included representatives from the North Florida PGA and The National Club Association. It was an open discussion and we talked about the challenges facing us today. We talked about maintenance budget cuts, capitol investment cuts, pace of play, difficulty of courses, rounds reduction, revenue reduction, and the environmental issues.

All groups have unique issues they are dealing with as individual associations.



*Gary Myers*, CGCS President

A question that was asked that I believe is significant was "Who is the face of golf?" Is it the PGA Tour, the USGA, the PGA of America, GCSAA, architects, owners, builders? I believe we are all part of the face of golf and need to work together as a group to tackle the difficult issues that face us today.

Each issue I mentioned earlier affects all of us. If rounds and revenues are down, it affects maintenance and capital budgets which will affect course conditions. If pace of play is an issue, it also affects rounds and revenue. Water, fertilizer and pesticide issues can affect course conditions which also affect rounds and revenue. The reality is that all issues lead back to rounds. Rounds are the driving force and as long as rounds continue to decline, revenues will decline and everything else follows.

I am not sure what the total answer is. but I firmly believe that if we don't work together collectively as a group, we will not succeed. During the panel discussion, I mentioned that we need to meet more often as we go forward. The group should include the FGCSA, Florida Club Managers Association, North and South Florida PGA sections, USGA, PGA Tour, LPGA Tour and representatives from the golf course architects', owners' and builders' associations. I believe these groups as a whole do indeed make up the "Face of Golf"

I look forward to my year as president of the FGCSA. I encourage you to get involved with your local associations and to offer me any suggestions or ideas as we move forward.

#### SPOTLIGHT



- PRESIDENT Gary Myers, CGCS Valt Disney World Resort 9765 Gault St. Orlando, FL 32836 407-824-3031
- VICE PRESIDENT Mark Kann UF Plant Science PSREU 2556 W Hwy 318 Citra, FL 32113 352-591-2678
  - SEC/TREAS Nancy Miller Maple Leaf G&CC 2100 Kings Highway Port Charlotte, FL 33980 941-255-3677
- PAST PRESIDENT Bill Kistler Tampa Palms G&CC 5811 Tampa Palms Blvd Tampa, FL 33647 813-972-3375

#### DIRECTORS

CALUSA Jim Foster, CGCS Coral Oaks GC 239-573-3106 CENTRAL FLORIDA Michael Gay Hunter's Creek GC 407-240-6006 Everglades Bill Davidson CC of Naples 239-261-0534 North Florida Matt Jones King & Bear GC 904-814-6918 PALM BEACH Steve Pearson, CGCS The Falls CC 561-641-4439 RIDGE Jim Rowland Lake Wales CC 863-676-3193 SEVEN RIVERS Jim Shaffer High Point GC 352-596-4356 SOUTH FLORIDA Ricky Reeves Miami Beach CC 786-402-7157 SUN COAST Mark Todd ValleyCrest @ Greenfield 941-749-7678 TREASURE COAST Roy MacDonald Hobe Sound GC 772-546-7243 WEST COAST Kevin Sunderman Isla Del Sol Y&CC 727-867-8098

#### **S**TAFF

EXECUTIVE DIRECTOR Joel Jackson 6780 Tamarind Circle Orlando, FL 32819 407-248-1971 voice/fax FLGRN@aol.com Association Manager Jennifer Innes PO Box 65 Jensen Beach, FL 34958 772-334-7515; 800-732-6053 (FL) fgcsa@comcast.net



FGCSA Directors for 2010-2011 are (l-r): Mark Todd (Suncoast), Steve Pearson, CGCS (Palm Beach); Kevin Sunderman (West Coast), Ricky Reeves (South Florida), Bill Davidson (Everglades), Jim Foster, CGCS (Calusa); Jim Rowland (Ridge), Michael Gay (Central Florida), and Jim Shaffer (Seven Rivers). Directors not pictured: Matt Jones (North Florida), and Roy MacDonald (Treasure Coast). Photo by Joel Jackson.

## Somebody, Turn Down the Heat!

From the coldest winter in 50 years to the hottest summer in 30 years, 2010 will go down as a record year. Mother Nature threw all sorts of curve balls and screw balls at golfmaintenance crews across Florida and the nation. These radical temperature fluctuations sure play havoc with those man-made climate change statistics don't they? They remind us that these changes come in cycles over time regardless of man's activity.

One thing that has remained constant is the vendor and superintendent support for all the FGCSA chapter events that do so much for turf research and local charities. Let's turn the Florida Green Spotlight on some of those events that took place this past summer.

#### FUTURE OF GOLF TOURNAMENT

The 30th Anniversary of the Palm Beach GCSA's Future of Golf Tournament was the best to date. Even though recent rains had softened the course, the field of 156 players was able to play without any stormy interruption. The only tough part of the day was the heat. Playing in 97-degree weather, no wind, 98 percent humidity and a heat index of 112 degrees definitely had everyone diving for the liquid refreshments. It was hot, hot, and hot!

The course was in excellent shape and the players complimented host superintendent, Steve Pearson CGCS, and his staff for putting on another wonderful tournament. After golf attendees enjoyed a sumptuous buffet dinner prepared by The Falls CC F&B department.

Once again the chapter benefited from great industry sponsorship and member participation by raising \$28,000 for turfgrass research, scholarships and junior golf. The Future of Golf Tournament has raised over threequarters of a million dollars in the 30 years of the tournament's existence.

The Power Pak Auction by Brian MacCurrach of Bayer Environmental Science raised a record \$6,400 for the products package with all of the money going to the event. In addition to Bayer, Hector Turf (Toro), ShowTurf of South Florida (John Deere) and Kilpatrick Turf



Newly elected 2010-2011 FGCSA Officers (l-r): Vice President Mark Kann, Secretary/Treasurer Nancy Miller, President Gary Myers CGCS, and Immediate Past President Bill Kistler. Photo by Joel Jackson.



#### PRESENTING SPONSORS

Harrell's, LLC – Vendor Appreciation Reception Howard Fertilizer and Chemical Co. – Golf Wesco Turf, Inc. – Awards Luncheon

#### PLATINUM SPONSORS

Agrium Advanced Technologies Brandt Consolidated Ewing Irrigation FIS Outdoor Golf Agronomics Supply & Handling (GASH) Golf Ventures Pinestraw of South Florida

#### SILVER SPONSORS

Bayer Environmental Science Central Florida Pinestraw Dow AgroSciences Eckert Golf Sales Florida Potting Soil Golf Specialties, Inc. Hendrix and Dail, Inc. Phoenix Environmental Care Pro Plus Golf Services

#### DIAMOND SPONSORS

Syngenta ITS/TM Geoponics Earth Sciences Ameriturf

#### GOLD SPONSORS

BASF DuCor International DuPont Professional Products Pathway Holdings, Inc. Precision Small Engine Co. Upstart Products, Inc.

#### LONG AND STRAIGHT DRIVE CONTESTS

Space Coast Turf Supply, Inc.

# 34TH ANNUAL LARRY KAMPHAUS CROWFOOT OPEN

Hosted by the Central Florida GCSA at the Grand Cypress Resort



PLEASE JOIN US IN THANKING OUR SPONSORS AND SUPPORT THEM WITH YOUR BUSINESS

#### SPOTLIGHT



Richard Colyer (left) and Dale Mitchell (right) of GASH presented their annual \$3,000 check to FGCSA Executive Director Joel Jackson at the Crowfoot Reception. They will make an equal donation to the FTGA Foundation at the Conference and Show. They have been doing this since 1994. You do the math. Photo by Joel Jackson.

Equipment and Irrigation (Jacobsen) were Diamond Sponsors. It was a successful day for everyone.

#### **CROWFOOT OPEN**

Traditionally the last big event of the summer is the Central Florida Chapter's Larry Kamphaus Crowfoot



Winners of the Vendor and Superintendent Divisions of the Crowfoot Open were John Swaner (left) of Golf Agronomics (GASH) and Mark Henderson, Gulfstream GC in Palm Beach. Photo by Joel Jackson.

Open held in the Orlando area. Once again Grand Cypress Resort hosted the event and the full field of golfers enjoyed the excellent conditions on all courses, which are a trademark of this facility. But the weekend is about more than just golf. Preceding the festivities, the Florida GCSA holds its Summer Board and Annual Meetings. Final budget approval for the new fiscal year and the election of new officers are two main agenda items including all the new and old business

discussions.

Two of the new items unveiled at the meeting were the new FGCSA **Industry Partners** Program which will allow advertisers and sponsors of FGCSA publications and events to sign up for various partnership levels crafted to meet the participation needs of old and new sponsors. Also in the works is a new FGCSA interactive Web site which is

currently under construction by Cyber Golf, a group used successfully by several of our peer associations.

Following the morning board meeting, the Central Florida Chapter hosted a half-day education seminar

#### **CALENDAR OF UPCOMING EVENTS**

#### NOVEMBER

Nov 9	FWCGCSA Chapter Meeting,
	Lexington Oaks GC
Nov 14	Suncoast Chapters Tampa Bay Bucs
	Game Bus Trip
Nov 15	Everglades Chapter Meeting,
	Old Collier GC
Nov 18	Calusa Chapter Meeting, Colonial CC
TBA	Seven Rivers Annual Fishing Trip
TBA	NFGCSA Education Conference

#### DECEMBER

<b>D</b> EC <b>10</b>	SFGCSA Meeting, Miami Shores GC
<b>D</b> EC <b>10</b>	12th Suncoast Annual Family
	Christmas Getaway Weekend,
	Gasparilla Island
<b>D</b> EC <b>14</b>	WCGCSA Proposed Vendor
	Appreciation Day, TPC Tampa Bay
<b>D</b> EC <b>16</b>	EGCSA Christmas Tournament, Quail
	West CC
TBA	Calusa - Annual Christmas Charity
	Tournament, TBA
TBA	NFGCSA Christmas Meeting and Golf
	Tournament
TBA	Seven Rivers Holiday Meeting & Toys
	for Tots Fundraiser

#### JANUARY

TBA	CFGCSA-FTGA Research Tournament,
	Interlachen CC, Winter Park
TBA	FGCSA Board Meeting
TBA	SCGCSA Annual Vendor Appreciation Day
TBA	SFGCSA Meeting, Crandon GC
TBA	TCGCSA Meeting
TBA	FTGA Regional Turf Conferences,
	various locations.

#### **FEBRUARY**

FEB 7-13 GCSAA / Golf Industry Show, Orlando

#### THANKS TO ALL OUR SPONSORS FOR THEIR LOYAL SUPPORT

## The POA Annua Classic [1975 TO 2010]

HOSTED BY THE EVERGALDES G.C.S.A.

#### **MAJOR SPONSORS**

Harrell's John Deere Golf / Show Turf Pinestraw Of South Florida Wesco Turf

#### **BIRDIE SPONSORS**

Bayer Environmental Science Club Care Dupont Professional Products Independent Turf Partners Syngenta

#### PAR SPONSORS

Aerification Plus CA-RY GOLF Dow Agrosciences G.A.S.H. Golf Ventures Howard Fertilizer & Chemical Co. Precision Small Engine Co. Southeast Partners / G To Z Turf Services Southern Ag

#### POA SPONSORS

All, Inc. Barnett Management Par Aide Upstart Products

#### **PAR 3 SPONSORS**

Ameriturf Geoponics Earth Sciences Green Technologies The Andersons Westrac Equipment

#### **TEE SPONSORS**

ESD Waste 2 Water Evans Oil Grigg Brothers Hendrix & Dail MJS Golf Services Prosource One



**Golf Course Renovation & Construction** 

- Excavation and Grading
- DRAINAGE
- GREENS
  CONSTRUCTION
- LASER GRADING
- BUNKER CONSTRUCTION
- ATHLETIC FIELD CONSTRUCTION
- GRASSING SERVICES
- EQUESTRIAN CENTERS

William H. Wright, CGCS PRESIDENT

> Robert Farina VICE-PRESIDENT

749 NE 70th Street • Boca Raton, FL 33487 (561) 272-4929 Fax (561) 272-4930 countryclubsvcs@aol.com

#### SPOTLIGHT



Suzanne and Tom Alex celebrate Tommy's 2010 Larry Kamphaus Award for service to golf, employer and community presented at the Crowfoot Open in July. Photo by Joel Jackson. for those needing to keep up their GCSAA PDI and certification points and Florida Pesticide License CEUs. Later that evening, the Annual Vendor Appreciation Reception was held in the Grand Cypress Villas Conference Center.

During the reception, Tom Alex, director of golf course operations at Grand Cypress was presented the annual Larry Kamphaus Award for his service to the golf industry in Central Florida with emphasis on his chairmanship of this event for so many years. Tom thought he was to

present the award to Brett Harris of Lake Nona, but it was a set-up, and the committee pulled off the ultimate "gotcha" on

Alex, a well known prankster in his own right.

Golf was held on the North and South courses the next day and perennial competitor Mark Henderson from the Gulfstream GC and the Palm Beach GCSA won the event with a sizzling 70 on a blistering hot day, which we all hope signaled the end of the heat wave.

#### **OLD BUSINESS**

We're including some photos of the Poa Annua Classic winners and the UF/IFAS Field Day which weren't available at press time for the last issue.



Howard Hulsebosch, from the Hillcrest CC in Hollywood shot a 70 to win the Poa Annua Classic and a spot on the 2011 FGCSA Golf Team. Photo by Brian Beckner.



Lest we forget one of the main missions of all these events, here's a picture of just some of the researchers and attendees at the 2010 UF/IFAS Field Day held last May at the IFAS Research & Education Center in Citra. Photo by Mark Kann.

# THE PALM BEACH GCSA'S FUTURE OF GOLF FOR 2010



Bayer Environmental Science • Hector Turf Kilpatrick Irrigation and Turf Equipment • Show Turf of South Florida, LLC

#### GOLD SPONSORS

Aeration Technology • BASF • Club Car • Dow AgroSciences Golf Agronomics Supply and Handling (GASH) • Golf Ventures • Harrell's, LLC Helena Chemical • John Deere Golf • Lake Masters Aquatic Weed Contol • Syngenta

#### SILVER SPONSORS

A.J. Balding Ameriturf Fertigation Specialists Flamingo Lakes C.C. Florida Superior Sand Grigg Brothers Foliar Fertilizer Independent Turf Partners Phoenix Environmental Care Prime Turf Pro Plus Golf Services Professional Turf Maintenance ProSource One

#### **BRONZE SPONSORS**

Adios Golf Club Aiello Landscaping - 3 Putt Nursery Bucky Dent Baseball School Buzz Jaskela - Landscape Architects DuPont Professional Products Dunn Signs Gilchrist Lawn, Tree and Irrigation Maint. Golden Leaf Tree Experts Hendrix and Dail, Inc. Kipp Schulties Golf Design, Inc. MACKEM Solutions Pathway Technologies Performance Nutrition Pike Creek Turf Precision Small Engine Co. Professional Golf Carts Solo Environmental Services Tampa Bay Turf TEAM GREENZKEEPER The Andersons Wylde West Annuals

Ragan Technical Solutions Tee-To-Green Turf Products The Friday Foursome Sanford Golf Design SpreadRite Sales & Service Upstart Products Westgate Management Co.

SPECIAL THANKS TO STEVE PEARSON, CGCS AND THE FALLS COUNTRY CLUB FOR HOSTING OUR EVENT

#### COVER STORY

The par 5, 13th hole is guarded by several of the 62 manicured bunkers on the course. Photo by Daniel Zelazek.

# The Coral Creek Club – A Hidden Treasure BY Joel Jackson

Florida's history is full of stories of pirates and buccaneers roaming the state's coastal waters, especially the West Coast from Tampa Bay to the Florida Keys. One the more prominent of these swashbucklers was Jose Gaspar, whose name lives on in the annual Gasparilla Festival in Tampa in late January or early February and in the namesakes: Gasparilla Island, Gasparilla Pass and Gasparilla Sound near the mouth of Charlotte Harbor.

You can't have pirate lore without having legends and rumors of buried treasures, and in some accounts of Gaspar's renegade lifestyle after he left the royal Spanish court, there are tales of a trip made up Coral Creek to hide some of Gaspar's booty. Last May I ventured to Coral Creek and indeed I found a hidden treasure, the Coral Creek Club.

The mission and vision of the founders of the club were to provide a first-class private country-club experience for residents of the area. They have certainly succeeded in accomplishing their goal with an inviting clubhouse and a challenging golf course.

Whereas Gaspar's riches were stolen, the Coral Creek Club was created by the Tom Fazio Design Group as they laid out the golf holes, a string of emeralds in the piney woodlands bordering the creek. Under the watchful eye of Fazio and on-site Design Associate Steve Masiak, the course incorporated plentiful natural areas into the routing to meld man and nature's creations together.

Back in the early 1990s I had the pleasure of working with Masiak as he oversaw the day-to-day construction of Disney's Osprey Ridge course, also a Fazio design. So, I was well aware of Masiak's attention to detail when it came to construction and making sure the land was shaped properly for players' challenges and for water movement and drainage. Ironically, superintendent Bob Wagner had also worked with Masiak previously during the construction of the World Woods courses near Brooksville. It's a small world after all!

Creating a gem of a golf course is one part of the story. The other part is guarding the treasure and that task falls to Wagner and the band of hearty souls who ply their skills under his watchful eye. Fifteen full-time and three part-time crew members tend the 140 acres of maintained turf on the 231-acre property.

Wagner says the course is the busiest in the fall, winter and spring like most Florida courses, but it never officially closes during the summer. However, as play dwindles in the heat, Wagner is then able to schedule his annual routine cultural practices like core aerifying and heavy verticutting. Summer is also the time for any special course-enhancement projects like expanding or creating new natural areas for example.

"We lean towards a more natural and native landscape pallet for the course and don't use showy annuals and ornamentals," Wagner said. "It's a golf course, not a garden. However, many of the aquatic plants used to buffer the shorelines and improve water quality put on a nice display when they bloom each year as well as the colorful efflorescence of the native muhly and fakahatchee grasses."

While riding the course with Bob I noticed the prominent contouring of the putting green surfaces, which looked challenging but also fun to putt.

"You have to know where to hit your approach shots to have the best putt at the hole on any given day," he explained. "We have used the same set-up man for the past nine years. He uses a digital level tool called the "smart level" to make sure we cut the pin position in a fair area that has no more than a one-to-two degree slope within a three- to four-foot area around the hole in all directions. Of course the cup cutter knows all these spots by heart now, but he still checks them to be sure."

As Wagner juggles his cultural practice schedule to minimize any golfer inconvenience, his program remains aggressive enough to ensure a healthy and playable turf that will meet member expectations.

"We will core-aerify the greens four times during the summer and then solid-tine them four times during the cooler months. We lightly verticut the greens weekly when the turf is actively growing and then use a Graden

### SUPERINTENDENT FACTS

**Originally From:** Brooklyn, NY. Lived in Florida for 30 years.

Family: Wife Valerie, stepson Andrew. Valerie has been a great support system in all aspects of my life. She's always there for me. Andy is now 19 and a freshman at USF, and I have learned a lot from him as well, and last but not least Mom and Dad. The good Lord blessed me with some awfully wonder-



**BOB WAGNER** Photo by Joel Jackson.

ful, loving parents who put up with a lot of grief from me when I was growing up.

**Education:** AA from Lake City Golf Course Operations program. Class of '87 – Go Stolons!

**Employment:** 1981-84 crew member, Innisbrook Resort. 1985 & 1986 OJT student intern, Bardmoor CC; 1987-88 assistant superintendent Tampa Palms G&CC. 1988-89 assistant superintendent Bardmoor CC; Bardmoor Bayou Club; 1989-91 Golf Course Superintendent Wentworth GC; 1991-95 GCS at World Woods GC; 1995-2000 GCS at The Club at Eaglebrooke; 2000-present GCS at Coral Creek Club.

**Professional Affiliations & Offices Held:** Class A member of the GCSAA, FGCSA and Suncoast GCSA. Served in various positions on Suncoast board of directors, most recently as external vice-president to FGCSA Board.

**Work philosophy and advice:** Work hard. Accept challenges. Stay dedicated and educated. Develop strong working relationships with superiors, members and peers.

**Goals & Accomplishments:** Getting that college degree fresh out of high school. Fulfilled desire to experience a couple of course grow-ins. One as an assistant and one as a superintendent. One long-range goal is to retire early enough so I can go mow fairways for some young superintendent.

Hobbies & Interests: Fishing, golf, Mustang cars, music, especially the blues, and New York Rangers hockey. Working with my wife and her Rotary Club and with her Young Life Ministries. Member of the Murdock Baptist Church in Port Charlotte and I help with their landscape and grounds maintenance.

#### COVER STORY



Bordering the 1st hole are native plant beds created for out-of-play areas. Photo by Daniel Zelazek.

set at a .625 inch depth in the late spring or early summer. Top dressing applications vary based on the cultural practice in effect and the desired results. Annual fertility rates on the TifEagle greens averages around 12 pound of nitrogen, 2.5 pounds of phosphorous and 17 pounds of potassium per year.

"Tees are aerified three to four times a year and fairways and roughs twice a year. Tees and fairways are verticut at least once per year with the Graden being used on the tees at the same green setting mentioned before. Fertility on the fairways and roughs average around 6.5 pounds of N, 1.0 pounds of P and 3.5 pounds of K with the tees being just slightly higher in nitrogen and potassium. Over the past two years we have been shifting our fertility program to more foliar versus granular applications. Right now it remains about a ratio of about 30 to 70 liquid to granular."

No golf course is immune to potential pest invasions so Wagner takes preventive steps to minimize any effect they might have.

"We make two or three pre-emergent weed-control applications in the fall and spring and then clean up isolated weeds by spot spraying using 14-gallon electric sprayers as we monitor the course," he said.

"We have had very consistent mole cricket and fire ant control using timed seasonal preventive applications of Top Choice. Since we are a sand-based golf

