WINTER 2017

ON THE TURF™

THE OFFICIAL PUBLICATION OF THE FLORIDA CHAPTERS OF THE STMA

LOOKING BACK
30 YEARS AT UF

REMOTE SENSING AND TURF MANAGEMENT

ATTACK! THE SEARCH FOR NEMATODES

ON THE TURF™

WINTER 2017
Volume 3 - Issue 4

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PRESIDENT'S MESSAGE

CENTRAL FLORIDA SPORTS TURF MANAGERS ASSOCIATION

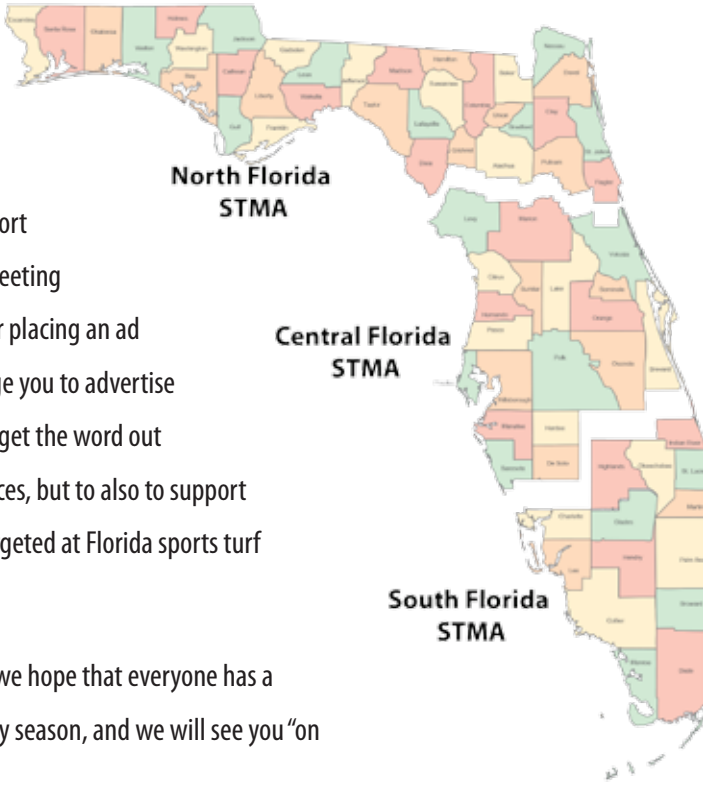
Here we are at another year's end. It's hard to believe it's here so quickly. I know we have all been busy with our fields from the damages that nature brought in September. I truly hope that everyone is on the way to completing not only their professional clean-up but their personal one as well!

With the end of the year looming, I need to bring up the conversation about membership. If you haven't joined through the new CFSTMA Membership Works, it's time now for you to renew at your chapter level. For those of you who joined through the CFSTMA Membership Works, you know the membership is good for 12 months (from the day joined or renewed) via the website. Approximately 30 days before your membership anniversary, you receive a renewal reminder. At the time of writing this letter, CFSTMA has 164 active members. We need 37 additional members to get us over our 2017 goal of the 200.

I want to take a moment to thank our brothers and sisters in the North and South chapters for their help with articles for ON THE TURF (OTT). Our goal was to emphasize OTT as a state-wide magazine and their input this year helped us achieve it. I encourage the Chapters to continue reaching out to their members to participate in any way they

can.

Thank you to our commercial members for all your support in 2017, whether it was meeting prizes, sponsoring lunch or placing an ad in ON THE TURF. I encourage you to advertise in our magazine, not only get the word out about your products/services, but to also to support a state-wide magazine targeted at Florida sports turf professionals.



From all of us at CFSTMA, we hope that everyone has a safe and wonderful holiday season, and we will see you "on the turf" in 2018. •

Dale Croft

CFSTMA President

CFSTMA 6

FIELD DA

February

SCHEDULE

7:00am – 7:30am Vendor Set Up

7:30am – 8:15am Registration, Refreshments, Visit Vendor Booths

8:15am – 8:40am Introductions and Opening Remarks

8:45am – 10:40am Classes

10:45am – 12pm Visit Vendor Booths

12pm – 12:45pm Lunch

1pm – 2pm Site Tour

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LOOKING BACK

30 PLUS YEARS

MANAGING REC SPORTS FIELDS
AT THE UNIVERSITY OF FLORIDA

By Wayne Zurburg
Maintenance Superintendent
University of Florida Department of Recreational Sports

It is hard to believe that it has been over 30 years since I joined the University of Florida Recreational Sports Program. At that time, they had six fields on campus and a single office located in the Northwest corner of Florida Gym built in 1949. Florida Gym was home to the entire College of Physical Education, which served as the administrative home to the Recreational Sports Program. One large office housed everyone that was a part of the program, and the maintenance shop was a small room, 16 x 30 feet in size, on the ground floor. The only additional location the Maintenance Department had was a storage area at the south end zone of Florida Field where we stored high-pressure paint machines and related supplies. At the time I joined Rec. Sports I had just two employees. We were responsible for maintaining Florida Gym as well as maintaining and painting the recreational sports athletic fields. These fields were planted with a mixture of bahiagrass and anything else that we could get to grow at the time.

Since my arrival on campus, a number of changes and improvements have taken place. An independent building dedicated solely to the Recreational Sports Program was built in 1989. It contained a variety of resources and facilities to support the wide range of recreation and fitness activities that were offered to the students. Beginning in the early 1990's a new facility was designed that included a quad softball complex, while a major renovation of the UVS open field occurred, transforming it into a new complex that included six sand volleyball courts, a pavilion, and a new turf grass athletic field, complete with irrigation. Meanwhile, Maguire Field underwent a major turf renovation to add irrigation and a small building that provided dedicated paint storage location as well as bathrooms for those utilizing the fields. Further, the new Southwest field complex was added and included additional rest rooms, a maintenance complex, and an

(continued pg. 8)

Photographer: Cameron Thompson

Photographer: Anne Marie Tamburro

office. All of these projects were completed by the end of 1994 and marked a dramatic shift in the equipment and resources needed to properly maintain the new fields that now covered nearly thirty acres on campus.

We started by obtaining a new tractor and a Toro seven-gang mower, along with a Toro Groundmaster. We also purchased an aerifier, sandpro, topdresser, verticutter, and two Toro Workmans. I was also able to hire a new maintenance mechanic to take care of our new equipment. During this transition the UF Physical Plant Grounds Department was responsible for taking care of the fields, mowing, edging and grading the clay infields with my oversight. This changed around 2000, when I took over field maintenance. I hired a new turf manager, turf grounds keepers, grounds support staff, and even some inside employees, a task only possible with the help of our Director, **David Bowles**.

Having assembled our turf crew, along with our mechanic Josh Studstill, without whom our equipment wouldn't run consistently, we were now ready to move forward on maintaining out fields. My turf supervisor, **Jesse Almeida** and I got together to assign maintenance responsibilities to the crew based on their knowledge and skill sets. We made a plan for mowing and evaluated our expected fertilizer and pest control needs.

It was and still remains a small crew to take care of thirty acres of Sports Turf 419 and Celebration. In addition to Jesse, our employees include **Dusty Foster** (irrigation and turfgrass maintenance) and **Robert Van Tassel** (maintains the softball complex and six volleyball courts). Our grounds keeping crew are extremely busy during the spring and summer months with the fields closed down for re-growing. We also have two grounds support workers, **Codey Austin** and **Colby Studstill**, who do all of our fielding painting. This is a pretty extensive task: they paint anywhere from twenty to twenty-five fields every week during the fall and spring semesters. This is because the University of Florida has 5,000 students participating in intramural and sports clubs. In addition to the over three hundred games a year that are played on our fields we also host any number of club sport competitions on our fields which often require additional work to setup and paint the fields on a case-by-case basis making our support crew a vital part of our department.

As the use of our fields increased, the centers of our fields would get torn up so badly that it became necessary to replace the centers on an annual basis. This changed in 2009 when we switched the centers of each field from Tifway 419 to Celebration®, a

(continued pg. 10)

Photographer: Anne Marie Tamburro

change that occurred just in time as our budget was cut as part of the reductions in state funding that the university received. This meant that from that point on all our fields would have to be grown in during the spring and summer months instead of re-sodded. Jesse is constantly tweaking the fertilizer program each spring to maximize the regrowth of the fields to ensure they are ready for play at the beginning of Fall semester.

We make every effort to handle most small repair and renovation projects internally utilizing the skills and resources of our crew. Some projects we have done in the past include: putting in a new irrigation system at Maguire field and renovating a sand volleyball court down at Lake Wauburg. In addition, we built a new batting cage as well as new pitching mound and home plate for our club baseball team. Thankfully, we no longer have to handle the re-sodding of the centers of our fields each year which often required an all-hands on deck approach to include staff from throughout the Recreational Sports Department. We would bring as many employees together as possible to assist with final site prep as well as pulling the seams together as the sod was rolled out.

A final item key to the success of our department is communication. Members of our department talk to each other every day, as lack of communication leads to work not being done to the standard the department expects, and most often results in more

Photographer: Cameron Thompson

time being necessary in order to redo the task. Without effective communication, the Recreational Sports Program would not be able to provide the level of service that the University of Florida has come to expect from us. There are far too many moving parts in an organization like this for a haphazard approach to communication and planning to succeed. •

ASK THE DOC

With Travis Shaddox, Ph.D

Q Hey Doc...How Much Potassium Do You Need for Turfgrass?

Potassium (K) is one of the six essential macronutrients supplied by soils or nutrient applications. Because the turfgrass requirement for K is high (second only to N) and K easily leaches in most Florida soils, we have great interest in maintaining an adequate amount of K in the turfgrass system.

Potassium is often associated with the alleviation of stresses from wear, cold, heat, and drought and, in limited cases, K has been shown to benefit stressed turf. Some believe that K applications increase bermudagrass root growth, but bermudagrass research conducted in Florida indicates that root growth does not increase with increasing amounts of K **(Figure 1)**. In fact, the vast majority of research indicates that bermudagrass does not respond at all to K. This is not intended to imply that K applications are unnecessary. In the prolonged absence of

By **Travis Shaddox, Ph.D.**
Assistant Professor
University of Florida
Ft. Lauderdale Research
and Education Center

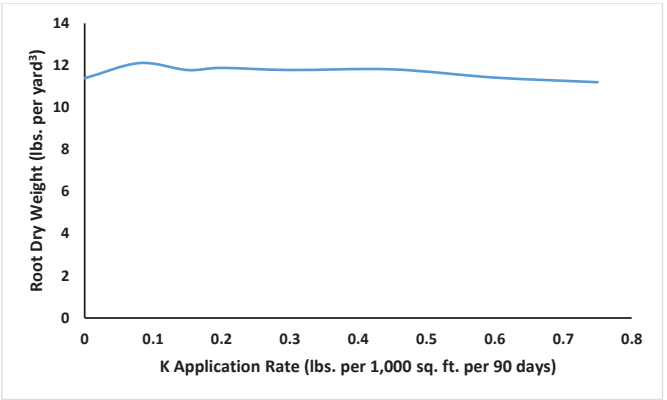

Figure 1. Increasing the amount of K will not increase root growth of Tifway bermudagrass (Sartain, 2002).

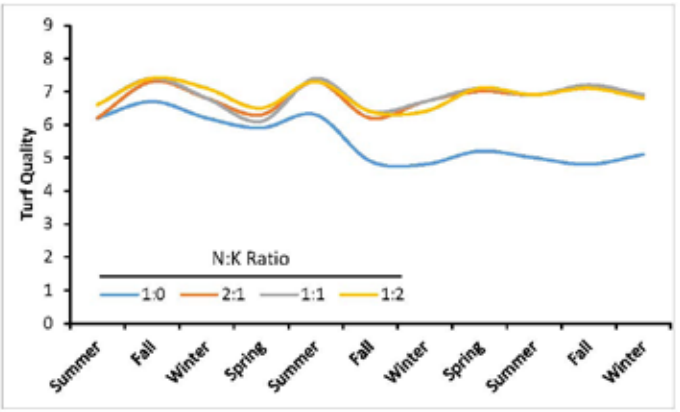

Figure 2. Applying K at 1/2 the rate of N will increase bermudagrass quality compared to no K, but further K additions are unnecessary (Snyder and Cisar, 2000).

absence of K, turfgrass quality will decline and likely become unacceptable **(Figure 2)**. In cases where turfgrasses do not respond to K, it appears the lack of response is due to the soil/turfgrass system already having adequate K. This is particularly true in cases where K is regularly applied. The turfgrass simply does not have an opportunity to become K deficient.

But how do you know how much K to apply and how often? In short, applying K at ½ the rate of nitrogen (N) at the same time as your normal N applications will greatly reduce any chance of observing a K deficiency. Many of us have applied K at 2-5 times the rate of N and found good results. However, the excess K will not result in better quality or greater tissue K levels **(Figures**

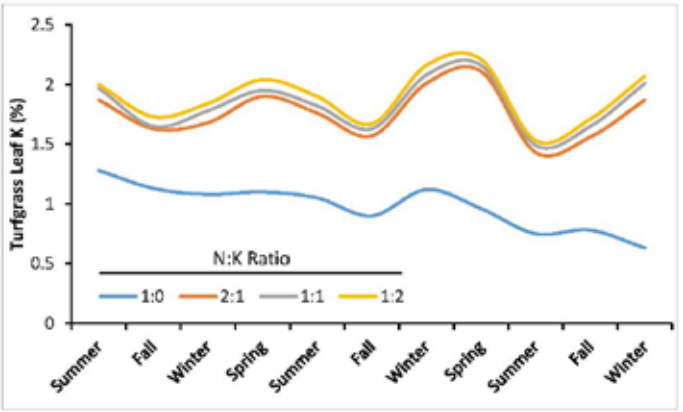

Figure 3. Acceptable bermudagrass leaf K content is 1.5% (Snyder and Cisar, 2000).

2 & 3) than a 2:1 N:K ratio. If K is not taken up by the turf, little if any K will be stored in the soil for future use because Florida soils have very low nutrient retention capacities. Thus, this excess K is wasted.

(continued pg. 14)

What about soil and tissue testing? Soil and tissue testing for K has limited value but can indicate when K should not be applied. Research conducted in Florida indicates that when Mehlich III extractable K is greater than 30 ppm, bermudagrass would not be expected to respond to K. The problem is that when soil test values are less than 30 ppm, we cannot provide a meaningful recommendation because soil test laboratories require a calibration to know how much K should be applied at each soil test value and, unfortunately, we do not have K calibration data. Tissue testing is similar to soil testing in that we know what is normal (~1.5%) but we do not have recommendations when tissue K levels are not normal. The good news is that regardless of the soil or tissue test result, the recommendation will be the same, which is to apply K at ½ the rate of N with your normal N applications. Therefore, if you are already using this K application method, soil and tissue testing for K is unnecessary.

SUMMARY

Applying K at ½ the rate of N with your N applications ensures that the turfgrass is receiving the benefits that K provides. If you wish to run your nutrient program using soil and tissue testing, then you may reduce or even eliminate additional K applications when your Mehlich III soil test value is greater than 30 ppm or your tissue analysis is greater than 1.5%. •

More information on N and K may be found through UF/IFAS at: http://edis.ifas.ufl.edu/ep540.

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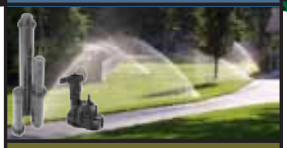

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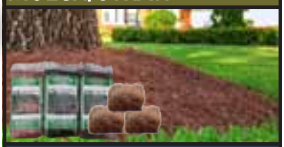

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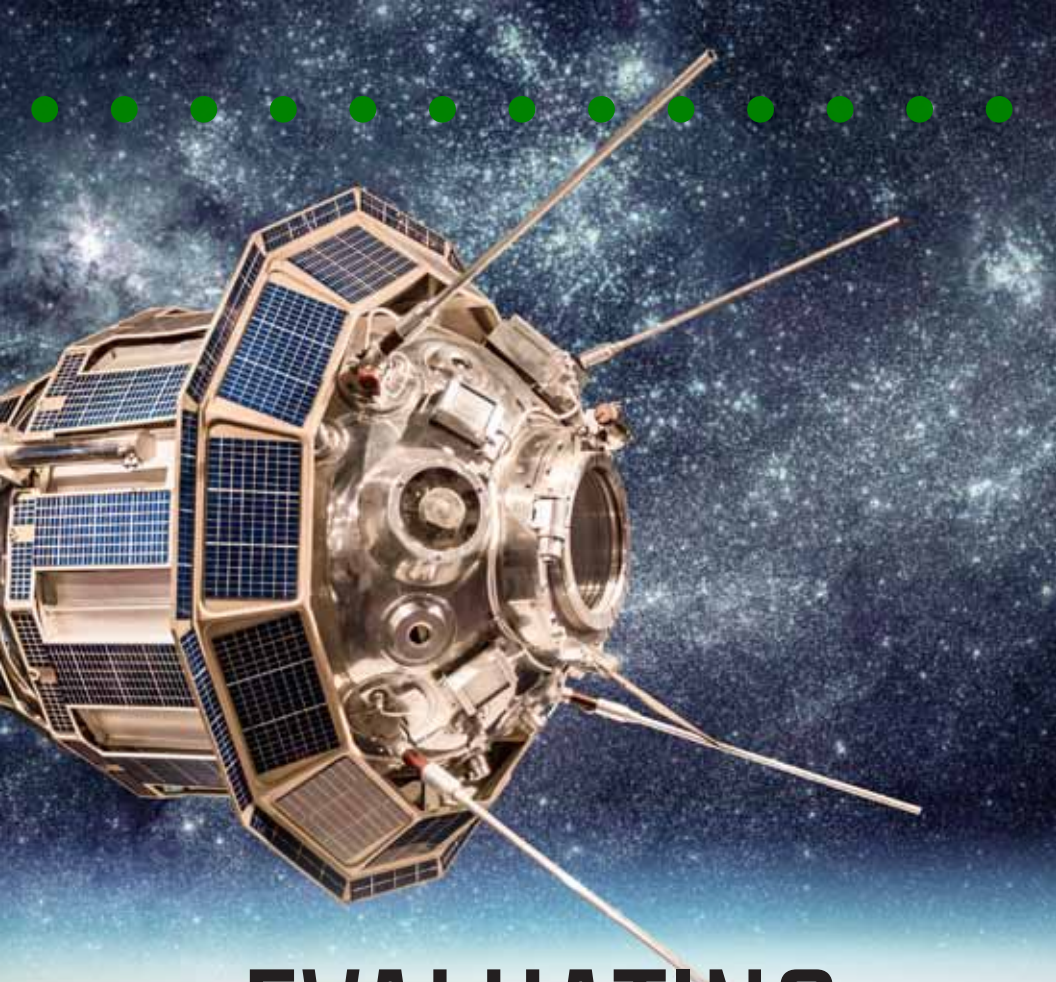


EVALUATING REMOTE SENSING TOOLS

FOR TURFGRASS MANAGEMENT

Since the advent of agriculture, sites have been predominantly managed in a homogenous, uniform manner. Plant growth and yield, however, typically vary significantly within a relatively small area because of the dynamic interactions of climatic, plant, and soil factors. Budget constraints and environmental concerns have put a focus on increasing input efficiency and implementing more environmentally conscious management practices. The concepts of precision agriculture (PA) have been the driving forces behind research geared toward maximizing efficiency and addressing environmental concerns. The fundamental principle of PA is to apply inputs (e.g., water, fertilizer, and pesticides) only where, when, and in the amount needed by the plant through utilization of geo-referenced sensors and geographic information systems (GIS).

By **Jason K. Kruse, Ph.D**
Associate Professor
Turfgrass Sciences
University of Florida

Similar to precision agriculture, the concept of precision turfgrass management (PTM) is gaining momentum as an approach to a greater degree of micro-management involving resources *(e.g., water,*

(continued pg. 18)

amendments, labor, energy, etc.) for efficient irrigation, salinity, nutrient, pest, and cultivation management. There would be no need for precision turfgrass management if all attributes on an athletic field complex were uniform. Unfortunately, no athletic field exhibits uniform conditions regardless of the method of construction; there is normally a significant degree of spatial variability that creates a number of microclimates, or site-specific management units (SSMUs) that have variable input requirements. Site-specific management units are sub-field areas that have similar soil properties and landscape characteristics, resulting in similar plant response, input-use efficiency, and environmental impact.

Spatial variability encompasses a number of factors occurring above and below the ground. Climatic factors influencing variability across the landscape include solar radiation (north and south exposure, duration, and shade), wind speed, humidity, and air temperature. Soil factors include texture, compaction, organic matter content, slope, soil depth, water holding capacity, infiltration rate, percolation rate, salinity, pH, and fertility. For example, hydrophobic soil conditions caused by humic and/or fulvic acid coatings on sand particles can cause localized dry spots, resulting in potentially significant spatial variability across a site.

FOR EXAMPLE

hydrophobic soil conditions caused by humic and/or fulvic acid coatings on sand particles can cause localized dry spots, resulting in potentially significant spatial variability across a site.

FOR EXAMPLE

PTM could be used to determine SSMUs throughout athletic fields based on variability in soil compaction.

Turfgrass professionals already incorporate a degree of site-specific management, as inputs are often allocated differently across a sports complex based on the use of the field. Unlike current management practices, PTM utilizes intensive soil and plant site assessment to acquire detailed information for more precise, responsible, and efficient management than what is currently conducted. For example, PTM could be used to determine SSMUs throughout athletic fields based on variability in soil compaction.

A number of factors come together as driving forces for PTM and involve: a) increased input, labor, and equipment maintenance efficiency through site-specific management, b) water conservation through more precise and efficient irrigation practices, c) pressure from society for

natural resource and energy sustainability, and d) awareness that it is incumbent upon industry leaders to promote a public image that is environmentally responsible.

Reflectance sensing is the procedure that has received the most attention for the implementation of site specific management in turfgrass. Reflectance sensing refers to the use of detectors that can measure the quality and/or quantity of solar or artificial irradiance reflected from a turfgrass canopy. Reflectance quality is determined by its relative distribution of energy by wavelength within the electromagnetic spectrum. A reflectance sensor contains one or more detectors and functions in a hyperspectral, multispectral, or single wave band protocol. Sensors may be either passive or active. Passive sensors rely on ambient light for reflectance measurements. Active sensors project pulsed light from integrated light emitting diodes (LED's) that project radiance onto a turfgrass surface at specific wavelengths. Detectors in the sensor collect the reflected radiance from only those bands. In an active sensor a phase shift and filtering process causes detectors to disregard ambient radiation. Detectors in an active sensor only collect reflected radiance originating from the sensor's integrated LED's. This process enables the accurate use of active sensors in sun, shade, or dark of night regardless of atmospheric conditions. Although passive sensors with ambient light detectors that measure both incoming sunlight and reflected sunlight are reliable most of the time, they are less accurate than active sensors in cloudy and/or shady conditions. Active sensors eliminate many of the variables associated with ambient radiation and provide consistency among measurements regardless of conditions.

REFLECTANCE SENSING REFERS TO THE USE OF DETECTORS THAT CAN MEASURE THE QUALITY AND/OR QUANTITY OF SOLAR OR ARTIFICIAL IRRADIANCE REFLECTED FROM A TURFGRASS CANOPY. REFLECTANCE QUALITY IS DETERMINED BY ITS RELATIVE DISTRIBUTION OF ENERGY BY WAVELENGTH WITHIN THE ELECTROMAGNETIC SPECTRUM.

When radiant energy strikes a leaf it may be absorbed, transmitted, or reflected. Very little radiance is transmitted through a dense plant canopy. Even a single leaf is effective for blocking most light transmission by primarily absorbing and partially reflecting photosynthetically active radiation (PAR). Although near infrared (NIR) is highly reflected and PAR is highly absorbed, those circumstances only occur when plant leaves are green. Early research found that red reflectance increased and NIR reflectance decreased as greenness declined in dying plants. This principle serves as the basis for much of the current work being done with remote sensing systems.

One of the keys to developing a PTM system is integration of various types and sources of data that can be utilized to create a detailed spatial picture of the site in question. Recently, emphasis has been placed on the incorporation of site-specific soil measurements such as soil moisture,

(continued pg. 20)

electrical conductivity, and bulk density recognizing that combining this spatial data with canopy reflectance data improves our ability to make assessments of plant health.

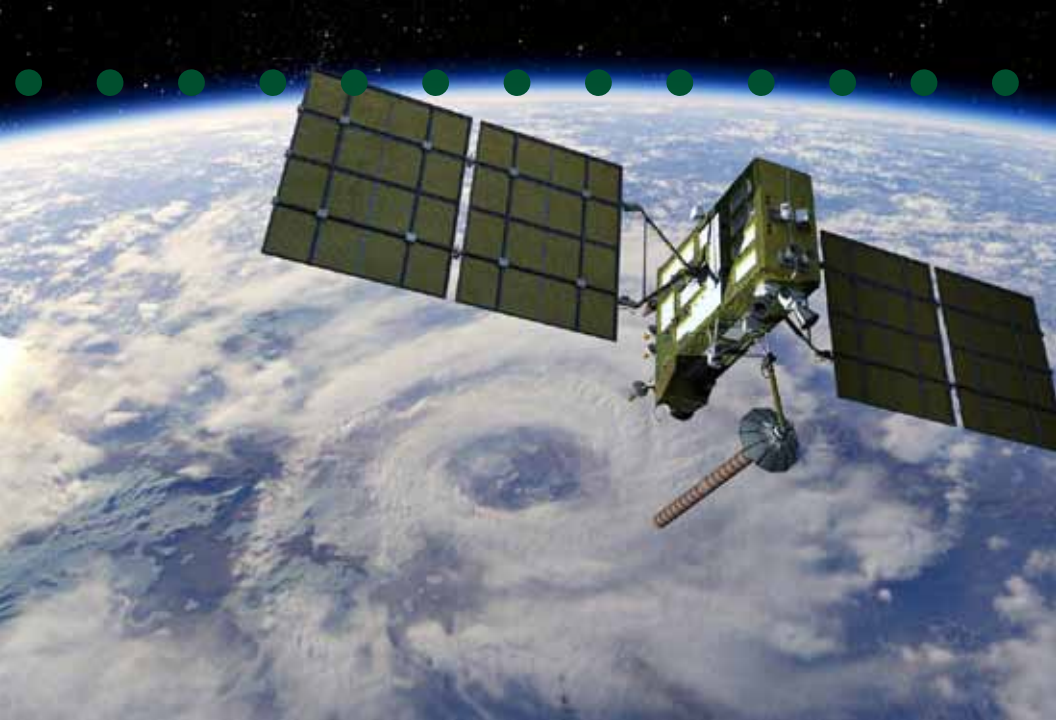
Once an appropriate mobile sensor platform with both plant and soil sensing capabilities is available, protocols must focus on specific field applications for spatial and temporal mapping. The first of these that has received a significant amount of interest as it relates to development of remote sensing tools is the field of irrigation management. With many irrigation systems offering the ability to manage irrigation heads individually. While this technology improves our ability to manage smaller management units there is still substantial room for error. By using GPS-referenced spatial VWC and plant stress data in conjunction with an irrigation scheduling system, this technology can provide turfgrass managers with the ability to make changes in the irrigation program or in the field. The turfgrass manager will also be able to modify the irrigation system design to alleviate distribution flaws. Spatial data could also be used to determine necessary cultural practices for the site under examination. These changes could lead to more efficient and/or uniform input application. Site mapping during dry periods when the spatial variability of the irrigation system could be assessed would be especially useful for precise determination of excessively dry areas and for determining system uniformity.

THE TURFGRASS MANAGER WILL ALSO BE ABLE TO MODIFY THE IRRIGATION SYSTEM DESIGN TO ALLEVIATE DISTRIBUTION FLAWS. SPATIAL DATA COULD ALSO BE USED TO DETERMINE NECESSARY CULTURAL PRACTICES FOR THE SITE UNDER EXAMINATION.

THE BEST OPPORTUNITY FOR WIDE-SPREAD ACCEPTANCE OF REFLECTANCE SENSING TOOLS IN THE TURFGRASS INDUSTRY WILL OCCUR ONCE REFLECTANCE SENSORS ARE CAPABLE OF PRODUCING A PREDICTIVE MAP INDICATING AREAS OF THE SITE SHOWING SIGNS OF STRESS, ALLOWING IT TO SERVE BOTH AS A DIAGNOSTIC AND SCOUTING TOOL.

Since N is the most common fertilizer used in turf, development of a system that is capable of identifying N deficient areas and prescribing a correcting rate through site-specific application of fertilizer materials would likely be of greatest benefit to the turfgrass industry. Spray systems have been developed that combine variable-rate spray nozzles and/or granular spreaders with multiple optical sensors. When these systems are combined with an integrated GPS locator and associated software it becomes possible to make and record fertilizer applications on a site-specific basis.

While it might seem that the science of reflectance sensing has been around for a number of years, researchers are still in the early stages of understanding the best use of the technology. The technology is not extremely expensive and could function to fill a variety of needs as it is developed further. Although they tend to be expensive, handheld reflectance sensors are widely available for turfgrass use.



The best opportunity for wide-spread acceptance of reflectance sensing tools in the turfgrass industry will occur once reflectance sensors are capable of producing a predictive map indicating areas of the site showing signs of stress, allowing it to serve both as a diagnostic and scouting tool. Currently, some turf managers may be reluctant to accept this new technology due to the expense and lack of diagnostic strength. Those that have accepted the technology may find that the reflectance sensors are useful in identifying and mapping problem areas that show early signs of stress. The benefit to the turf manager is that these data can be collected frequently, maybe even daily in some instances, across the entire facility, allowing them to reduce the time spent scouting and reallocate resources to other projects. •

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ATTACK OF

BACKGROUND INFO

Plant-parasitic nematodes are nematodes (unsegmented roundworms) that feed on plant roots. There are many species of plant-parasitic nematodes that attack turfgrass growing on athletic fields in Florida. The most common nematode issues on Florida athletic fields are caused by sting nematode (Belonolaimus longicaudatus) and lance nematode (Hoplolaimus spp.), although damage may also occur from root-knot, stubby-root, spiral, awl, ring, and other types of nematodes as well.

By: William T. (Billy) Crow, Ph.D.
Professor of Nematology
Entomology & Nematology Department
University of Florida

THE KILLER

BELONOLAIMUS LONGICAUDATUS

(a.k.a. Nematodes)

Feeding by plant-parasitic nematodes can cause turfgrass roots to be short, diseased, and non-functional. This causes the turf to wilt, decline, wear out, pull up, and in some cases die. Additionally, nematode-damaged turf may need more frequent irrigation, not respond to fertilizer applications, and to have prolific weeds (**Figure 1**).

Seasonal activity of plant-parasitic nematodes is largely dependent of soil temperatures and food availability. Soil temperatures throughout the winter in Central Florida are ideal for reproduction and activity of both sting and lance nematodes and as long as there is plenty of food (growing roots) available, these nematodes will be active. However, root

Figure 1. Polo field infested with sting nematode, grass is wilting and declining. Note nematicide-treated plots with healthy turf.

growth of warm-season grasses like bermudagrass, zoysia, and seashore paspalum, will slow or stop during the winter as these grasses go partially or completely dormant. Without new roots to feed on nematode numbers will remain stable or decline on warm-season turf during the winter. As the grass becomes active in the spring it will grow new roots and with abundant food nematode activity and reproduction will increase. On most sports turf in Central Florida nematode numbers increase beginning in February and reach their peak in May. As these nematodes feed they damage the roots and cause the roots and the turf to decline. With less roots to feed on, nematode numbers tend to decrease during the summer. However, winter overseeding can greatly impact this dynamic.

Soil temperatures throughout the winter are ideal for sting and lance nematodes. When overseed is planted it provides a new food source that the nematodes can, and will, take advantage of it. Instead of remaining static or decreasing over the winter, nematode numbers will increase. UF research has shown that sting nematode numbers double on overseeded in May compared to non-overseeded bermudagrass (**Figure 2**). As the overseed starts to die off it

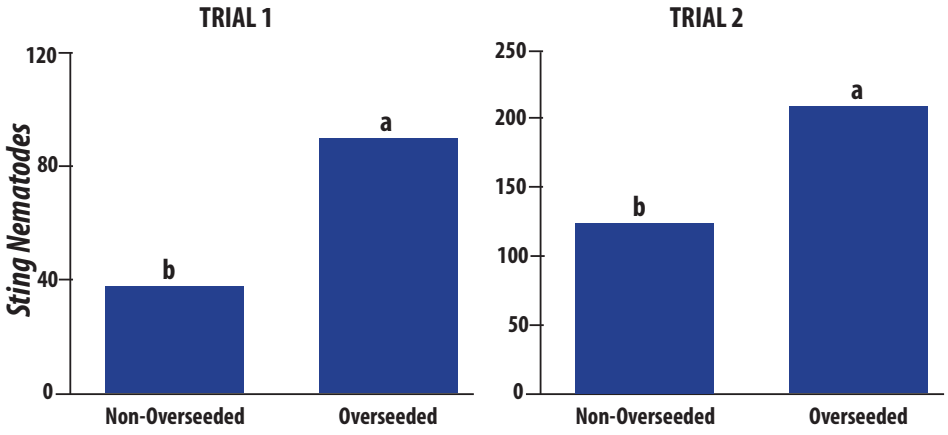

Figure 2. Results from two field trials showing the effects of overseeding on numbers of sting nematode per 100 cc of soil in May.

leaves lots of hungry nematodes to feed on the growing bermudagrass roots in the Spring. The bermudagrass root system will be more compromised and the turf will be more impacted than if overseed was not used. This makes for a very difficult transition (**Figure 3**) and a frustrated turf manager! With a more severely damaged bermudagrass root system following overseeding, there is even less for the nematodes to eat during the summer, so the Summer decline in nematode numbers is even greater than without overseeding. Seasonally, the peaks and valleys in nematode numbers will be much greater on overseed athletic fields than on non-overseeded ones (**Figure 4**).

Figure 3. Lance-nematode infested athletic field following overseeding during transition.

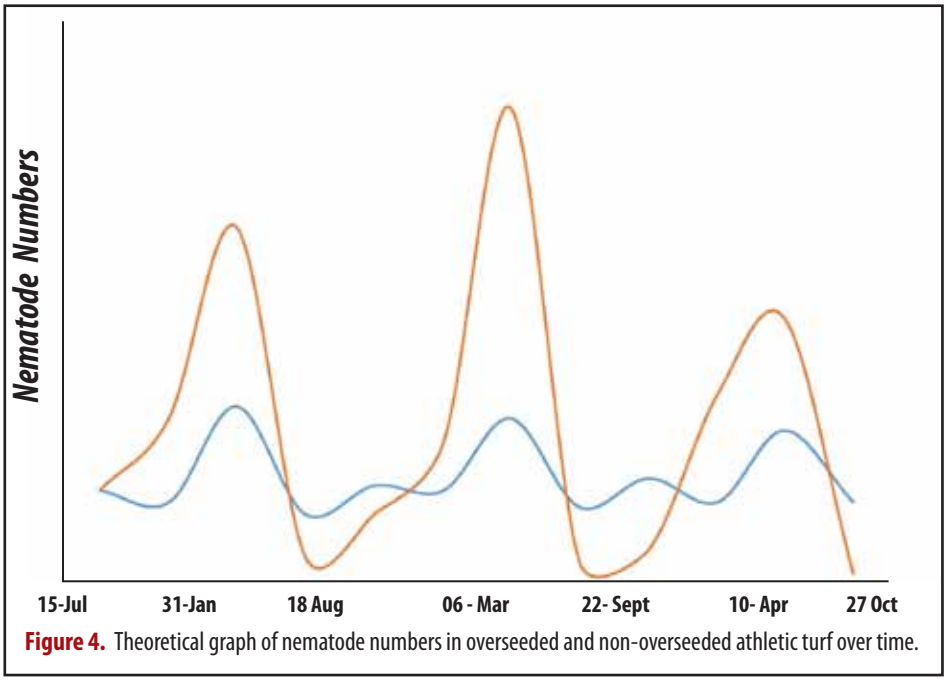

Figure 4. Theoretical graph of nematode numbers in overseeded and non-overseeded athletic turf over time.

(continued pg. 26)

What are the practical implications of this? First, in athletic fields with a history of nematode issues overseed should only be used when absolutely necessary. I realize that for many readers overseeding is not optional. If that is the case you need to be prepared and plan accordingly. Nematode population densities will be much more volatile and transition may be rough. Other implications have to do with timing of nematicide applications. To achieve a headache-free transition you want to go into the winter with a healthy root system and you want to protect new root development as the grass breaks dormancy.

1,3-dichloropriopene, the active ingredient in Curfew Soil Fumigant, is very effective and quick-acting on nematodes in soil. It can be used only once per year, and it has an extremely short lifespan in the soil. On non-overseeded athletic turf it is best used Curfew Soil Fumigant in the spring (March-May) to protect newly developing roots, or in the early fall (September-October) to promote healthy roots before going into dormancy. For overseeded turf fall applications of Curfew are not recommended as UF research has shown that although the fumigant will be very effective at the time of application, the nematode numbers will increase over the winter to be just as high in the spring as if no treatment was applied.

Fluopyram, the active ingredient in Indemnify nematicide, has long residual activity on soil. UF research has found Indemnify to suppress nematodes for 6-8 months or more. On both non-overseeded and overseeded turf applications of 0.2 fluid ounces/1000 ft2 in the fall and in the spring, or a single application of 0.39 fluid ounces/1000 ft2 in the spring have achieved good results (**Figure 5**). On overseeded turf make the spring application of Indemnify just prior to the onset of transition.

Figure 5. Overseeded bermudagrass during transition. Plot on left received 0.39 fluid ounces/1000 ft2 of Indemnify in February, plot on right received 0.2 fluid ounces/1000 ft2 of Indemnify in October and February.

Other nematicides labeled for use on athletic turf, such as fluensulfone in Nimitz Pro G and furfural in Multiguard Protect, are short-lived in soil and require multiple applications to achieve good results. For both of these nematicides spring applications have achieved greater success than fall applications in UF trials. Make 3-4 applications at 3-4 week intervals beginning with the onset of grass growth in the spring.

A key to managing nematodes is to take action early to prevent problems. Keep those roots healthy going into and coming out of the winter to set your fields up for success. •

RECOMMENDED READING

W. T. Crow. Nematode management on athletic fields. University of Florida/IFAS Extension. http://edis.ifas.ufl.edu/in126.

W. T. Crow, T. Lowe, and D. Lickfeldt. 2005. Overseeding and nematicides affect sting nematodes in bermudagrass fairways. USGA Green Section Record 43(6):8-11.

COMMERCIAL MEMBER SPOTLIGHT

Gil Delgado

Miami-Dade County Parks and Recreation and Open Spaces (PROS) Sports Turf Management and Landscape Services Chief Gil Delgado commenced his career in November of 1993. After working as a Park Service Aid, Recreation Leader, and Job Training Specialist, he took his field experience to administration. His educational and field experience, along with his passion for Parks and Recreation, have been vital in propelling his career. During his tenure, he has been able to hire the first Sports Turf Manager in the history of Miami-Dade County PROS.

Chief Delgado has been a member of the Sports Turf Management Administration since 2013. He has also been a sought out to serve on evaluation committees for the City of Miami regarding the City's sport turf maintenance. His knowledge, professionalism and evidence based approach has allowed him to gain the respect of his colleagues and for County Departments to enlist his services for maintenance, such as the Port of Miami. Landscape Services has been providing landscape maintenance to the port for 10 years. In 2016, 4,980,490 visitors enjoyed first-hand the landscaping provided by Landscape Services crews.

Chief Delgado's 24-year career with the Miami-Dade County Parks and Recreation and Open Spaces Department has been exemplary. In 2000, he was appointed to oversee the Multipurpose Special Tax Division, which requires the overseeing of 121 special taxing

districts comprised of over 31,000 folios, 8 natural areas, 90 lakes and over 10,000 trees with an estimated annual budget of $6.9 million. Through the years, he was able to identify the need to professionalize the workforce. He worked in conjunction with the Florida Nursery, Growers and Landscape Association (FNGLA) to get staff certified as Landscape Technicians. By having certified workforce, you are guaranteed to have staff that is continuously being educated on latest trends and technology in the industry allowing for efficiencies to constantly be identified. In 2009, the Division obtained the PGMS (Professional Grounds Management Society) Gold Star Award.

Chief Delgado holds a Bachelor of Science degree in Parks and Recreation from Florida International University. ●

ON THE TURF TIPS FROM STMA

Here are a few tips from STMA on the care of your Spring season turf. Please keep in mind that they are just tips and you will need to develop a plan that works for you.

DECEMBER - FEBRUARY

MOWING

Recommended mowing height for ryegrass is 1"-1.5".

On non-overseeded bermudagrass fields and bermudagrass typically goes dormant during cooler temperatures. If this is the case, most maintenance practices become unnecessary. On bermudagrass fields overseeded with ryegrass will need to continue through these months.

IRRIGATION

Typically dormant bermudagrass generally doesn't require irrigation. Irrigation should occur on an as needed basis with overseeded fields. One or two irrigation applications per week are usually sufficient to maintain fields.

Always water at the first signs of wilt. Wilt is characterized by folded or curled leaves, blue-green color and visible footprints left after walking on the surface. Wilted turf can recover quickly if it is taken care of immediately. Traffic should not be allowed on wilted areas or recently recovered wilted areas if possible.

FERTILIZER

Recommended amount of nutrients per month if you have overseeded with ryegrass is .5 lbs.-1 lb. N/1,000sq. ft. Fertilizer applications are unnecessary on dormant bermudagrass fields, unless they are overseeded with ryegrass. They will perform better with monthly applications of fertilizer. If air temperatures are consistently less than 50 degrees F., turfgrass growth potential is low.

CULTIVATION

There are no recommendations for soil cultivation at this time of year. However, you know you micro climate and what you can and can't get away with.

Bermudagrass seeding or sprigging is not recommended during the winter because bermudagrass goes dormant. It requires warm temperatures for proper establishment. Sod can be installed essentially any time of the year that the soil is not frozen. However, if the field is to be played upon the following Spring, bermudagrass sod installations should occur by early to mid-fall at the latest.

DISEASES

On non-overseeded bermudagrass fields diseases are generally not a problem. Overseeded bermudagrass fields need to be monitored for disease presence.

OFF-SEASON MAINTENANCE

Winter is also a great time to devote to equipment maintenance repair. Proper equipment maintenance and care prolongs the life of the equipment and saves money in the long run. This may also be a good time to replace or upgrade your inventory.

INSECTS

Insects are generally not a problem in bermudagrass fields during the cooler temperatures.

WEEDS

Recommended time to apply herbicides

- December, January, February - Postemergent control of winter annual and perennial broadleaf weeds
- February - Preemergent control of summer annual weedy grass

The goal of turf management is to produce healthy turf while limiting reliance on pesticides. Many managers follow Integrated Pest Management (IMP) practices. This program does not completely eliminate pests, but maintains the population to a tolerable level. Pesticides are often a part of IPM programs, but they are selected and applied responsibly to avoid health risks to other living organisms than those targeted. It is important to routinely scout the fields and identify the pest problem in the early stages.

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SportsTurf Managers Association
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Full page advertisement in ON THE TURF (4 publications)	$2,250	**Inside front or back cover advertisement** in ON THE TURF (4 publications)	$3,060	**Full page back cover advertisement** in ON THE TURF (4 publications)	$5,660
TOTAL	$2,750		$3,560		$6,260
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For credit card payments, contact the CFSTMA office at 727-578-1962. Send checks *(payable to CFSTMA)* to Rob Julian 3302 W. Martin Luther King Blvd. Tampa, FL 33602.

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