Summer 2015

ON THE TURF™

THE OFFICIAL PUBLICATION OF THE FLORIDA CHAPTERS OF THE STMA

INSIDE THIS ISSUE:

ON THE TURF™

TABLE OF CONTENTS

Summer 2015
Volume 1 - Issue 2

FEATURES

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SportsTurf Managers Association

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Dale Croft, President

South Florida STMA
Tom Curran, President

PRESIDENT'S MESSAGE
CFSTMA

Hello Turfers. Well how did you like the inaugural issue of **On The Turf**?

I have been checking our email, CentralFloridaSTMA@gmail.com and I haven't seen any comments, so I am assuming we did a pretty good job on the first go around. Way to go Team!

One thing I would like to touch base on is the membership application and the map of the state showing the 3 chapters. As President of the Central Florida Chapter, I would like to let you know that I will not hold it against anyone in our chapter that would like to join the North or South chapters. If you find that either of those chapters is more convenient to your home or work, I encourage you to find what works best for you. I hope that the other Chapter Presidents feel the same way as I do.

What is important is that you do join or renew your membership in one of the chapters and help support the chapter you are in. I would like to ask you to take a baby step forward and get involved with the chapter. You will be surprised at how much the smallest effort makes a difference. **Your involvement will set an example of leadership to your fellow colleagues.**

We all understand that the past few years have been difficult to get our employers to support us financially for memberships. Even if you own your own business, you recognize that things have been tight the last few years. The economy has picked up and with the movement for more recreational fields and qualified people to operate them, we are now in a new unique position state wide.

We can now see down the road and it looks great!

Belonging to a great organization such as STMA or one of the Florida chapters, will allow you access to the latest trends in our industry and enjoy a camaraderie of fellow turfers. I encourage you to show your employer, wife or husband the magazine and explain to them, that if you support your local chapter you

will help to increase your knowledge and expertise, which in turn will make you more valuable to your employer or customers.

I also encourage you to ask your supervisor to help you by supporting your annual dues. This will help make them look better by supporting your membership. It will set an example and allow them to show their supervisors how they are helping their employees by supporting an educational opportunity in their staff's chosen profession. And, believe it or not, your chapter is here to educate you and keep you at the forefront of the latest technology and industry standards.

As we say here in Central Florida,

"The key to our success as a chapter all depends on the success of our members".

So please pick a chapter, fill out the application and come on board.

On a final note, **"Don't put off 'til tomorrow on something you can do today."** ●

Dale Croft
CFSTMA President

CHAPTER NEWS

CFSTMA News

Wow, where has the time gone since our field day at the Randy Larsson Softball Complex? I want to thank **Emilio Mendoza** for securing the location and **Elton "Butch" Giddens** for allowing us to come in the first place. The site was wonderful. The help that you and your team provided contributed immensely to a magnificent day.

I also need to thank **Julie Zigler** with Rain Bird for such a great presentation on irrigation. I hope everyone was able to pick up a few tips that will make their duties a little easier.

Another thank you needs to go out to **Celeste White**. Celeste was able to provide 2 CEU's for our spray certifications and how fun was it in the way we earned them. Who is ready for Jeopardy now?

Furthermore, I need to take a moment to say thank you to our commercial members for their participation as well. Your new equipment and tools look great. If I didn't make it by to say thank you, I apologize. If I did get to see you, thank you again for your participation.

Last, but not least, thank you to the members who braved I-4 after that bad accident and made it to our event. With all of us combined, it was an outstanding event.

I am sorry that I didn't get more photos however, there is only so much that I or the board can do. With that being said, we need a few volunteers who can take photos at our events. Please send them to CentralFloridaSTMA@gmail.com so we can show the whole state what a good looking group we are.

In case you are unaware, Zach Johnson has stepped down as the Treasurer and **Rob Julian** has stepped up to fill that position, thanks Rob.

I want to take a moment and say a huge thank you to my fellow chapter members:

Joe Gasparini - V.P. Professional Members, **Bill Johnson** – V.P. Commercial Members, **Mark**

Miller – Secretary, **Rob Julian**- Treasurer. In addition to our board members, there are two men who continue to volunteer and make a huge impact on the success of CFSTMA. **David Nowakowski**, our Dean of Education and **George Lawson**, the "Grandfather" of our chapter; we couldn't do it without them.

These incredible chapter members are part of the back bone that helps to make this chapter successful. If you have ever volunteered for something, you know that sometimes you work harder on the program than you do on your own jobs and we do it all for free.

So, I am asking everyone to take a moment when you see these hard working indivduals at an event or on the street and say thank you to them for all they are doing to help make CFSTMA a huge success.

Along with my fellow board members, we say thank you for all of your efforts in helping to make CFSTMA such a huge success! I truly mean it from the bottom of my heart.

With that, I need to close. I hope to see everyone at our June event as a member of CFSTMA. ●

South Florida STMA News

The Board of Directors met in April, 2015 to revitalize our association. Motions were made and passed to expand the Board and appoint additional Directors to fill vacant positions.

Plans were discussed to complete rechartering with the national STMA, hold regular member meetings, review the bylaws, modify the dues structure and consider renaming to the simpler, South Florida STMA, consistent with other Florida Chapters. Our new Board is: **Tom Curran** (President), **Chris Denson** (Vice-President), **Bruce Bates** (Treasurer), and **Phil Busey**, **Ed Lamour**, **Nick Pappas**, and **Jason Wingate** (Directors). The majority of our new Board is involved in hands-on Sports Turf Management.

(continued pg. 6)

(South Florida continued)

We are asking members to renew their annual dues either through the application in **ON THE TURF** magazine or through our web site www.sfstma.com. *Sports Turf Managers Association, Florida Chapter #1, Inc.*

The Chapter received this opportunity from the University of Florida and would like to share it with you:

The University of Florida is currently reviewing applications to fill the open Environmental Turfgrass Science position at the UF/IFAS Fort Lauderdale Research and Education Center. ●

UF | UNIVERSITY of FLORIDA

70/30 SAND/CLAY

By Bruce Bates, President
Pro-Grounds Products, Inc.

What clay composition is best for your ballfield? The sand/clay and silt content of the clays used in South and Central Florida can run as high as 70% sand with only a 30% clay and silt content. Anything higher than that would have to be imported from out of the state of Florida or be a blended product that uses imported materials from outside of the State of Florida.

Generally for infield clay for recreational, high school and even collegiate use the 70/30 sand/clay and silt content works just fine, as it will take some moisture without turning into a quagmire. But, as anything with a clay content, it has it's saturation point where it will not hold up without the use of clay conditioners that pull the moisture from the clay. Generally, the only way to save the clay from this type of saturation would be to cover the clay before the point of saturation with tarpaulins. The less clay and more sand that infield clay contains, the more tolerant to moisture the material will be without covering and the quicker it will recover from saturated conditions.

Unless we are dealing with a major league facility or if we are dealing with home plate and pitching mound packing clays, we do not want to get too high of a clay content unless we have the ability to stop play and cover or keep a field covered prior to game times. When we do call for clays with a higher clay content, we go to Alabama for 60% clay and silt content with 40% sand. We can go as far away as Texas for 70% clay and silt content, like the Florida Marlins play on at Sun

Life Stadium or in Ohio for the gumbo clays used for packing mounds and home plate batter boxes.

I have had the opportunity to work for Miami-Dade County Schools, City of South Miami, Palm Beach County, Monroe County, Village of Pinecrest, Palm Beach Gardens, Baltimore

(continued pg. 8)

(70/30 continued)

Orioles, University of Miami, Florida International University, Florida Atlantic University, and Barry University and many more throughout the years.

I have been in the ball field and clay industry for over 30 years. The only time that a municipality has not used the Florida clays consisting of 30% clay and silt content or less is if they where hosting a major league team and had the ability to keep the field covered during rainy periods.

FLORIDA NATIVE RED CLAY

"Hard Pan", I describe it as hardened clay balls like as if someone had rolled clay balls and left them out in the sun to bake. Then they turn into boulder like formations in the clay. They are caused by the clay becoming wet and bonding together. As the clay dries, it hardens as if it was being fired like what they do with pottery. If the clay is made "friable" (the ability of a solid substance to be reduced to smaller pieces with little effort. The opposite of friable is indurated.) by screening or the sifting of the clay, these dried, hard pan clumps can be removed, but at the first sign of moisture they will re-form. The good part is that when they first re-form they are still relatively soft and break up easily. It is only after long periods of forming that they get so hard and sun baked that only re-moistening them will soften them back up.

A rule of thumb when judging the amount of clay that an infield will take to bring it up to grade is 3 full truck loads of clay to elevate a full size baseball or soft ball field 1".

What we have done to control the hard pan is to wet the material with a water truck and turn the material over and over to make sure the clay is wet or damp in the stockpile. The key to getting rid of the hard pan is to constantly turn the material and keep it moist or wet. The hard pan clumps are heavier and they tend to roll to the bottom of the pile and we load with the loader bucket raised higher up in the stock pile. We can also screen the clay to remove the larger hard pan clumps but remember there will always be some clay balls, but they should be easy to break up and this does add expense.

As you know, many customers do not maintain their fields as they should and when it dries out they do not understand why they have this problem.

QUANTITIES OF CLAY

Any clay is a difficult commodity to judge quantities of because clays by nature absorb a lot of water and condense in size once there is moisture present and the air is forced out of it. When clay is dry and dumped from a front in loader bucket into a truck and then dumped from the truck, it gets aerated and actually becomes fluffed up and expands because of the presence of air. When clay is left to sit and it settles, it actually appears to shrink. So a full truck load of clay can look as much as 30% less once it has settled, been exposed to moisture and it compacts. So when you receive a load of clay that is damp, it will appear to be less clay than the dry loads, but when the clay is worked, it will then expand with the introduction of air.

A rule of thumb when judging the amount of clay that an infield will take to bring it up to grade is 3 full truck loads of clay to elevate a full size baseball or soft ball field 1". Because the surface is usually kept loose and a bit fluffed, the top inch should only take 2 truck loads. Hopefully, this will help you to judge the quantity of clay your field will need.

HOW TO ORDER CLAY

In order to provide the most economical materials for your fields, employ long distance, over the road tractor-trailer dump vehicles to deliver your material directly from the pit to your site. The smaller single unit vehicles are geared for local deliveries and are not generally used for these over the road deliveries. Although these tractor-trailer dump trucks do lose some maneuverability on the job site, the overall cost advantage usually is more desirable than the added expense of bringing the material into the central yard, storing, and re-loading a smaller truck with another delivery charge.

Even the firmest of fields tend to soften when wet. PLEASE REDUCE IRRIGATION TIME PRIOR TO TRUCK ARRIVALS FOR DAYS. We have experienced complaints of these trucks rutting up fields when the fields are softened from rain and trucks have been getting stuck on the fields requiring expensive recovery equipment to be employed to free them. Therefore, we have found it necessary to implement a policy with the drivers that when a field appears to be soft or when wet weather has softened up firm fields, they are not to leave solid ground or they will bear the recovery expenses. Only if the customer is willing to bear the recovery expenses and is willing to sign an affidavit stating so, may a driver attempt to make a dump in a questionable area.

Vendors and suppliers must rely on their customers to know their fields, have planned entry routes, dumping area and exit routes for the drivers to follow and take control of the implementation of these routes at the time of the deliveries. If the field has uncertainties regarding the performance of 80,000 lb. trucks on them, make sure that a smaller truck be used for this type of terrain.●

SAND

The Good, the Bad and the Ugly

By Dr. Phil Busey, Agronomist
Phil Busey Agronomy Consulting Inc.

Sand can provide adequate drainage for grassed sports fields. Visiting the beach we see how well sand drains. But sand is not all the same and not very predictable. Unlike a beach where sand is sieved by the action of waves, among constructed sports turf fields there is big variation in sand particle sizes. And even when we know the particle sizes, the performance of sand soil is not accurately predicted based on particle size alone. Direct physical analysis is required to measure air-filled porosity and hydraulic conductivity (internal drainage) which predict how well turfgrass will grow and can be managed.

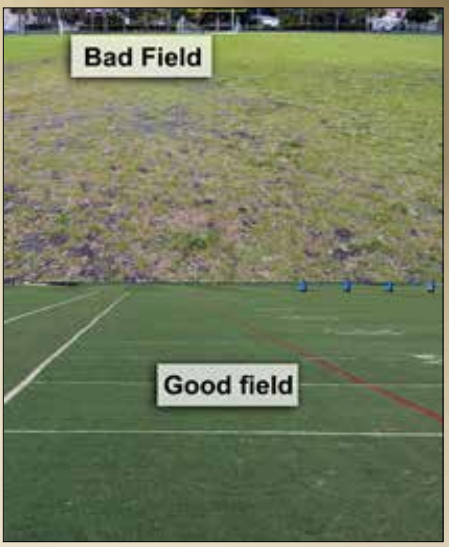
WHAT IS SAND?

Sand is soil particles larger than 0.05 mm in diameter—larger than silt and clay—and smaller than 2.0 mm. Particles larger than 2.0 mm diameter are gravel. A soil with more than 90% sand is by definition sand soil, not just sandy soil, but sand. A sports field with more than 80% sand is generally considered a sand field.

As an agronomist, I have assessed dozens of South Florida sports fields, and all have more than 80% sand, so all are sand fields, yet no two fields are alike. In fact, two fields can differ greatly in their hydraulic conductivity and air-filled pore space or macroporosity (Table 1).

	Bad Field	Good Field
Clay (%)	1.4	0.3
Silt (%)	5.6	3.4
Sand (%)	91.1	96.0
Conductivity (inches/hr.)	3.3	9.2
Air-filled Pore Space (%)	1.6	18.6
Very Coarse Sand (%)	1.5	3.6
Coarse Sand (%)	9.6	36.6
Medium Sand (%)	35.7	37.3
Fine Sand (%)	29.3	15.3
Very fine Sand (%)	15.0	3.2

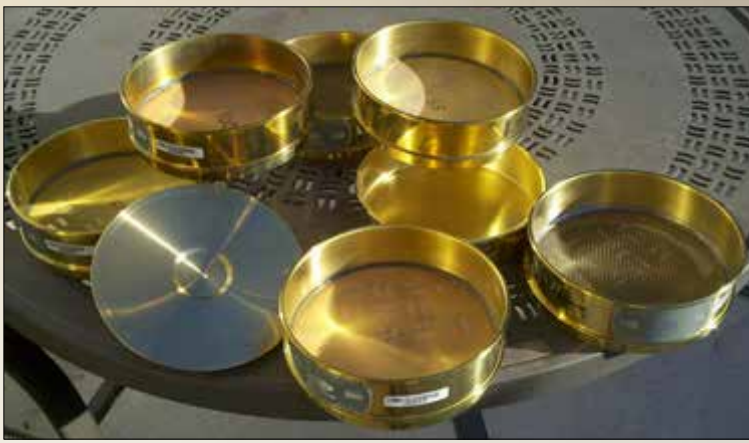
Table 1. Two sports fields (as pictured) soils that differ in performance. Main particle sizes (clay, silt, and sand) are similar in content but there is a large difference in sand sieve fractions, e.g., coarse sand vs. fine sand.



Two South Florida sports turf sand soils differ greatly in performance and characteristics.

SAND SIEVE FRACTIONS

Sand particles are usually fractionated in the laboratory with mechanical sieves of decreasing mesh sizes, weighed, and represented as a percentage of the total sand weight.



Within the sand size range of 0.05 mm to 2 mm diameter there are very fine sand particles which are less than 0.10 mm in diameter and behave almost the same as silt. At the high range, sand particle diameters greater than 1.0 mm, which is very coarse sand, is too well-drained and too unstable (and provides poor traction and poor footing) to be managed as turf. The ability of very coarse sand to retain water and nutrients is almost zero.

Within intermediate particle size ranges, sand less than 0.25 mm diameter is considered fine; sand at least 0.25 mm and less than 0.5 diameter mm is considered medium; and sand at least 0.5 mm and less than 1 mm diameter is considered coarse. These three sand sieve classes which are the main ideal components of sand fields also vary in performance. An ideal sports field sand with optimum water and nutrient retention would consist of a mixture largely of fine, medium, and coarse sand. But even if we know the fine, medium, and coarse sand content, we cannot accurately predict sports turf field performance. In fact, if we keep thinking of soil as a bunch of particles, we won't be able to explain very much.

It is not primarily the particles that give the soil its characteristics, but the spaces between the particles, called pores, that explain almost everything. All the living interactions of soil occur

(continued pg. 12)

(Sand continued)

in the water and air that fill the soil pores. By thinking not about the soil particles but the pores between the particles, we will understand almost everything.

What are the performance characteristics of sand soil for sports fields, and how do the pores tell us the performance?

POROSITY

A sand soil should provide sufficiently rapid, interior, downward movement of water by gravity that it does not pond or interfere with athletic use. The immediate problem of ponding is that when fields are played in a wet condition, there can be excessive compaction of soil particles and soil particles can get kicked or scuffed away causing wet depressions. Large pores between soil particles are pores that drain by gravity; they are larger than about 0.06 mm in diameter.

A sand soil with a wide range of particle sizes will drain more poorly by gravity than a soil with particle sizes clustered with a well-sorted narrow range. This is because with a wide range of particle sizes there is more opportunity for the smaller particles to fill the voids between the larger particles. This partial filling leads to a tighter packing of particles, higher bulk density (weight of consolidated soil per volume) and less volume of large pores capable of gravitational drainage. Soil that is too packed will have surface firmness that can be related to sports injuries and will restrict root growth by resisting penetration of roots.

Water in sand drains by gravity and allows oxygen to diffuse to grass roots. The large pores are sometimes called “macropores” or “air-filled pores” and the small pores are called “capillary pores.”

Any pore space is beneficial and allows the movement of water

and nutrients in soil, if not by gravity then by wicking or capillary movement. But only the large pores allow considerable and rapid gravitational drainage. And only the large pores allow for rapid diffusion of gases such as oxygen and carbon

dioxide that lets soil breath so roots can function. And only the large pores give roots an easy time in penetrating the soil.

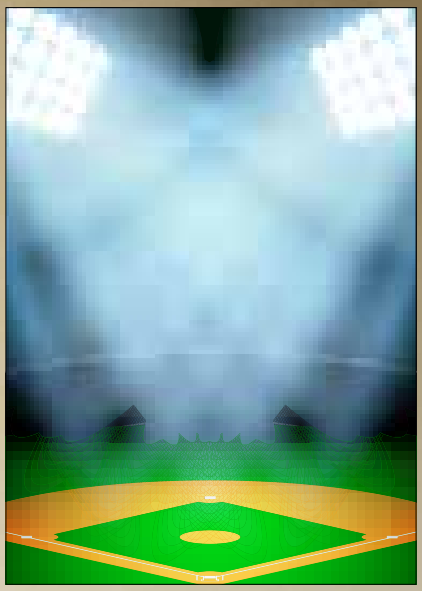
Native sand fields in South Florida have only a few percent of large pores, while a minimum of 18% is recommended.

HYDRAULIC CONDUCTIVITY (INTERNAL DRAINAGE)

Although we can think of downward water movement as "drainage," or a combination of infiltration (water enters the soil) and percolation (water moves through the soil), the hydraulic conductivity test is done under standardized laboratory conditions with a small degree of compaction. The technical term is "saturated hydraulic conductivity." This involves the collected soil sample that is mixed, loaded, and compacted, and subjected to a constant "head" or pressure of water. The rate of movement is called "saturated hydraulic conductivity".

INFILTRATION RATE

Unlike hydraulic conductivity which is performed under precise laboratory conditions, an infiltration test is performed in the field. The measurement of infiltration and hydraulic conductivity is much more complex that this simple explanation but if there are differences in amount of subsurface water, this test is not



repeatable. And on-site infiltration tests are generally less repeatable than physical analysis in the laboratory, although they may capture the effect of soil layering.

OTHER CONSIDERATIONS WITH SAND

Because of the instability of sand fields, 10% to 15% organic matter by volume is usually included. Ideally this should be a reed sedge such as spaghnum peat that is relatively stable. In time a sports field will "grow" its own organic matter through the deposition of thatch, however, in the first few years a field can be quite unstable. Organic matter provides additional nutrient and water retention. In any case, the mixture of root zone components, to be thorough, must be done off-site.

The mineral composition of sand is

(continued pg. 14)

(Sand continued)

important. Most available sand is quartz (silicon dioxide or "silica") which is hard and often sub-round but can vary in angularity, which is important in field stability. As a hard mineral, quartz sand resists weathering and is chemically fairly inert. In South Florida, particularly in dredged materials, some sand is a marl or shell rock consisting mainly of calcium carbonate or limestone. The calcareous mineral liberates enormous quantities of calcium, can result in soil pH trending to 8.2, and is not physically stable but can weather into smaller particles with a gradual reduction in porosity and reduction in hydraulic conductivity. Although turfgrass can be grown in calcareous sand, the availability of micronutrients such as manganese and iron is reduced at high pH and some cations such as potassium are rapidly leached by competitive replacement by calcium in the soil.

One would think that theoretically a soil can be amended with sand by field application and incorporation with a rototiller. But even ignoring the near impossibility of effective on-site mixing, the fine components (silt and clay) overwhelmingly dominate the characteristics of a sports turf soil. The amounts of amendment required are far in excess of the soil being amended. It is easier and less costly to remove and replace soil, or to cap with a layer of 3 to 6 inches, than to perform on-site amendment.

RECOMMENDATIONS

My best recommendation is to do a complete physical analysis of any soil before it is selected for sports field construction. If there is a desire to amend an existing soil, an amendment test should be done separately, the sample blend would be submitted to a laboratory for evaluation, and only if the results were satisfactory would the amendment be done, preferably off-site.●

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Professional

MEMBER SPOTLIGHT

Robert Samples

My name is Robert Sample and I am the Director of Sports Turf for the University of Central Florida Athletic Association here in Orlando. I am responsible for 24 acres of athletic turf on campus which includes the intramural fields. We have a landscape company that maintains 20 acres of common grounds around all of our facilities. Our staff of seven people are responsible for the day to day maintenance of all of our athletic facilities.

I worked in the golf course industry for close to twenty years splitting my time between Illinois, Arizona and Florida. In 2001, the UCF Athletic Department was developing their own Facilities and Operations department and it was at that time I made the switch to the Sport Turf industry.

I successfully completed the two year Turfgrass Management program at Michigan State University in 1993. It was at that time I met my wife Leah while I was on my internship in Queensbury, NY. While I am not working at UCF I enjoy golfing, outdoor activities and spending time with my family. ●

Commercial

MEMBER SPOTLIGHT

David Nowakowski

I am the Sports Turf Territory Manager in Florida for Harrell's, LLC. I started my Turfgrass journey at Penn State University, earning a B.S. in Turfgrass Science. During that time, I started with Golf Course maintenance in Pittsburgh and State College, and then made the transition to the Beaver Stadium Grounds Crew. This is where I found my passion for Sports Turf. The passion continued after graduation into the Minor League with the Bowie Baysox. Next, I spent some time at Roger Dean Stadium in Jupiter, after that I worked in Maryland for a State College and Cal Ripken's Independent League Team. The next piece of the Sports Turf puzzle was filled in by the Baltimore Ravens. After enjoying many seasons in the NFL, I moved on to manage Municipal Sports Complexes and Landscape contracts for Brickman and became a Branch Manager. Every one of these pieces are special to the puzzle; without one, it is incomplete. Each venue has a different set of challenges, and I give a great deal of respect to all the Sports Turf Managers at each type of venue.

I am supported by my lovely wife, Rachel. We have been married for 5 years and have three sons, Sidney, Sigmund and Simon. We currently reside in Palm Bay, Florida. I enjoy spending time with the family, doing work around the house and rooting for my sports teams; Let's Go Pens and Here We Go Steelers! ●

To submit profiles, please send them to ontheturf@crgnet.net. Maximum word count is 300.

Professional Baseball Field Maintenance

An Interview with Opie Cheek

By Bill Johnson, Territory Manager, Wesco Turf

When you attend either a spring training game or minor league game, you see a perfectly manicured, usually Bermuda ball field with perfectly straight lines and perfectly manicured clay. The grass is freshly mowed and dark green. The chalk lines are perfectly straight. Everything looks like it came out of a movie. It takes many years of on the job training, and very hard work to maintain a ball field.

Opie Cheek has been doing it for over twenty-eight years. Opie is the field supervisor for the Clearwater Threshers (Phillies) in Clearwater Florida. Opie was in the lawn business for five years before accepting a position with the Phillies twenty eight years ago. The Phillies changed their name to the Threshers when they moved into their new stadium in 2004. Opie is an STMA member, and learned his trade the hard way but probably best way, by what he calls on the job training. The Threshers are in the Florida State League. Opie worked at Jack Russell Stadium from 1987-2004 and has been at Bright House Networks Field from 2004 to present. I sat down with Opie and asked him a few questions about what goes into maintaining such a beautiful complex.

Q: How many fields do you maintain? *We have 4 ½ practice fields and one main field.*

Q: How many acres is that? *Including everything, that would be about 19 acres.*

Q: How many people do you have on your staff? *Including myself, 10 people.*

Q: What is your agreement with the City of Clearwater? *We mow everything inside the fence, and Clearwater mows what is outside the fence.*

Q: What heads are you using in your irrigation system? *We use Hunter heads.*

Q: What is the hardest part of your job? *Tarping the field when it rains. We were fortunate last year. We had no rain outs.*

Q: Do your fields get to rest?
We are busy throughout the year. We have sixteen spring training games, then seventy Florida State League games, concerts, graduations, senior league games, fantasy camps, AAC tournament, etc.

Q: What type of turf do you have?
Bermuda 419.

Q: Do you have any artificial turf fields? *Not at this time.*

Q: It looks like you have added some upgrades to the complex?
We have six indoor batting cages, an expanded weight room, basically a new sports training facility.

Q: What are some things that are unique to your stadium?
We had the first "Tiki bar", a walk around (cat walk) that enables you to walk around the stadium, a full play ground for the kids, and a new, larger Jumbo-Tron.

Q: You just completed spring training. How many hours per week do you and your crew work?
We average 80 hours per week for five weeks.

Q: What would you tell someone that wants to start a career in sports turf management?
Get an internship with one of the teams. The best way to learn is to be "hands on", don't be afraid to get your hands dirty.

This has worked very well for Opie. He has been awarded "Sports Turf Manager of the Year" in 2009 and 2012, and Florida State League Field of the Year every year from 2004 through 2014. ●

MANAGING THATCH:

THE ONGOING CHALLENGE WITH NEW SOLUTIONS

By Jerad Minnick
Growing Innovations

Challenge

Thatch management is an ongoing challenge on natural grass athletic fields in the State of Florida. Excess thatch causes scalping, limits water infiltration, and feeds insect and disease issues. But worst of all for high traffic natural grass fields, thatch build up leads to a decrease in durability. With turfgrass managers working hard to produce natural grass fields to meet the demand for increased use, there is less and less time to deal with thatch.

The on-going battle with thatch is now easier with a wide range of maintenance tools. Before looking at those tools, let's first examine what thatch is and where it comes from:

Thatch - What Is It?

Thatch is defined in University of Florida guidesheet ENH12, *Thatch and Its Control in Florida Lawns* by L.E. Trenholm, J.B. Unruh, and John L. Cisar, simply as:

"An intermingled layer of dead and living shoots, stems, and roots that develops between the zone of green vegetation and the soil surface."

That "intermingled layer" can build up quickly, especially on grasses that are growing vigorously. But why is thatch bad? What harm is being caused to a natural grass playing surface by that layer "between the zone of green vegetation and the soil surface"?

There are actually several negatives that thatch build up causes. A few are:

- Limit water movement: Excess thatch can reduce infiltration of water into the soil, from irrigation and/or rainfall. A field with a thick thatch layer will be very slippery when the field is wet, leading to poor playing conditions or causing cancellations because of a wet surface. That same surface is hard when it is dry, for players and for irrigation water trying to soak in. With the thatch dried out and irrigation water not able to penetrate, isolated dry spots will appear.

- Harbors insects and disease: A thatch layer provides a haven

for insects and disease pathogens, especially when the layer is staying moist from rain and extra irrigation to keep it from drying out and getting hard.

- De-creased durability: The "intermingled layer between the zone of green vegetation and the soil surface" requires grass plants to grow vertical from the soil up through the layer. The vertical growth reduces roots and connection points with the soil below. Overall grass density and tensile strength decreases, increasing divoting and slowing recovery. A natural grass field without proper thatch management will have a noticeable drop in durability from year to year.

Thatch - What Causes It?

Now that we understand what thatch is and why it is bad, what causes thatch? No, it is not clippings. Research supports that clippings from regular, timely mowing do not cause the initial thatch buildup. In fact, clippings can actually fuel microbial activity that break down thatch.

Thatch accumulation is actually caused by many regular turfgrass maintenance practices. Practices like aggressive fertilization to promote vigorous, continual plant growth. Practices like the regular use of fungicide and insecticide that kill vital microbes and organisms that break down thatch. Practices like frequent watering that suffocate the soil microbes. Adding to the challenge of thatch management, all of these practices have to be increased as thatch increases because of the damage to thatch. The increase in the thatch accumulation rate then increases. On goes the continual challenge.

Thankfully the range of thatch management tools is widening. From maintenance of a current thatch accumulation to the complete removal of the entire layer, let's examine some of the options:

Aeration/ Softening

Simply breaking the thatch layer open in any way to allow air into the microbes helps a thatch layer. This can be done using a variety of different tools. Spiking, slicing, or surface aeration with solid tines all can help. Even a tine harrow or spike board can help. Not only is air allowed down into the layer, but water can better penetrate as well. Opening that thatch layer without removing any material isn't the ideal situation, but when time or equipment lack and it is the only option, anything will help.

Topdressing

Light, frequent topdressing applications aid in breaking down a thatch layer. But light and frequent is the key. Too much topdressing material at once can lead to layering and actually make the thatch issue worse. Light and regular topdressings should take place during the growing season

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with a material that is compatible with the existing field soil media. A soil physical properties test such as an ISTRC test can help aid in selecting a topdressing material. A long-term commitment to topdressing can reduce a thatch layer, especially in combination with verti-cutting and core aeration.

Thatch Consumption Products

Microbial products are now available that can be applied to aid in the decomposition of thatch. It is hard to know which products work better than others, so ask your fertilizer vendors about the products they carry and the results that they have seen from those products. Recently in Florida there have been some excellent results from Thatch Buster from Floratine Products. There are other products that can work for you as well in combination with spiking, topdressing, core aeration, and verti-cutting to reduce a thatch layer.

Brushing

A process as simple as brushing seems too easy to help with the challenge of thatch management. But it can be very helpful. Brushing a field regularly will bring up thatch where it can be collected or broken up more with mowing. Brushing also helps get air down into the thatch layer. Yes, brushing is simple. But it helps.

Core Aeration

Practices that remove thatch should be utilized whenever possible. Core aeration is the first of these practices. Pulling cores remove thatch and open up the layer to allow air in for the microbes. Depending on the tine size and spacing, a PTO driven core aeration machine on a 2" x 2" spacing can remove up to 7.67% of surface and thatch in a single pass according to data from the International Sports Turf Research Center. Plugs pulled should be removed from the field. Pull behind, spinning plugging aerators can help soften the surface and open the layer, but the amount of surface area they remove with a spacing over 4" x 4" is not effective for removal and reduction of thatch. If thatch is an issue, 2" by 2" spacing with a PTO driven or self propelled aerator should be the maximum spacing utilized to make an impact.

Recycle Dressing

The Superintendent of Parks in Rotterdam, Holland invented the Recycling Dresser when his topdressing budget was cut. The machine is a linear slicer with spinning cutting blades. Instead of moving the soil to the side like regular slicing, the machine instead removes thatch and soil up and out then topdresses it back onto the field. The slicing action opens up the thatch layer and the topdressing is worked down into the layer to help break it down. The compatibility issue with topdressing is eliminated along with the cost of buying material.

Verti-cutting

Verti-cutting has historically been the most aggressive approach to thatch removal.

International Sports Turf Research Center data shows a verti-cutting machine with 3mm blades on 1" centers removes 11.81% of the surface area. Removal of the material removed is important. Blowing off the surface with a large debris blower works well when a collector or sweeper is not available. Verti-cutting, especially in combination with core aeration and light, frequent topdressing can help reduce a thatch layer.

Fraze Mowing

With the introduction of fraze mowing in the United States in the spring of 2012, for the 1st time there is an option to remove up to 100% of a thatch layer in a single pass. The depth a thatch layer can be removed down to with fraze mowing is dictated by the time the field has to regenerate. Removing more can require more recovery. A field that is failing because of a thick thatch layer can now be saved without having to do a complete renovation. With fertilizer and maintenance protocols evolving to speed up regeneration of a field, a window as small as 2 weeks now can be an option for fraze mowing. Yes, fraze mowing is an extremely aggressive practice. But with the ongoing challenge of managing thatch, it now provides an option to remove all thatch periodically to dramatically increase field durability and reduce the time and money put into the thatch battle.

(continued pg. 24)

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Conclusion

This wide range of thatch management tools provides an entire arsenal to use against the ongoing challenge of thatch. Any and all of these tools, especially used in combination, can help you as a turfgrass manager stay ahead of that "intermingled layer of dead and living shoots, stems, and roots that develops between the zone of green vegetation and the soil surface".

Thatch will always be produced, but as we learn to manage it more effectively, the less of a challenge it will be! Remember, natural grass fields can sustain more use. We just have to continue to evolve the maintenance practices we use! ●

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On the Turf Tips from STMA

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

June - August

Mowing
Recommended mowing heights 1-1.5" and should not exceed the 1.5".

The general rule when mowing a stand of Turfgrass is not to remove more than 1/3 of the total leaf blade at one time.

Some of the effects from removing more than 1/3 of the leaf blade at one time are:

- Negatively affects photosynthetic production of food
- Depletion of the carbohydrate reserves in the plant roots
- Graying or browning of leaf tips
- Root growth restriction
- Weed encroachment
- Increased susceptibility to damage from insects, disease, drought and traffic
- Excess clippings

Warm season grasses are actively growing throughout the summer months. Mow as often as needed, which is generally 2-3 times a week.

Irrigation
Recommended amounts per week (minus any rainfall) is 1" to 1.5".

It is important to know all the soil properties and that native soil root zones containing high amounts of clays and/or silt typically have high water holding capacity. Sand based root zones have little water holding capacity and may percolate water very quickly.

Soils that have a good aggregation permit more rapid infiltration than a soil with poor structural properties. If a soil is compacted, aggregation is reduced or absent. Compaction at or near the soil surface can greatly reduce the rate of water infiltration.

Always water at the first sign of wilt.

Fertilizer
Recommended amount of nitrogen per month is 0.5-1.5 lb N/1000 sqft.

(continued pg. 26)

Make sure to check with your local and state agencies for any restrictions on applying nutrients. For some areas with restrictions on inputs or other management program constraints or objectives, there are organic and microbial products available in the marketplace. STMA encourages you to talk with vendors and practitioners for recommendations to fit your specific needs.

Cultivation
Soil cultivation should be done once a month when the turf is actively growing. If the turf is undergoing stress then soil cultivation should be avoided. Soil cultivation is a necessary practice in order to keep bermudagrass fields in acceptable condition. Bermudagrass produces significant amounts of thatch that should not exceed .5" throughout the growing season. When cultivating, 2-4 passes in different directions should be made on the field.

Some forms of cultivation are Hollow tine, Solid tine, Shatter coring, Water jet coring, Slicing, Vertical mowing, Spiking, Deep tine, Deep drill and drill and fill.

Weeds
Healthy, dense stands of turf are the best way to prevent disease, weed or insect infestations. Following proper cultivation practices throughout the year, including fertilization, irrigation, mowing, seeding, and

soil cultivation, can minimize and sometimes eliminate pest problems.

Make sure to check with your local state agencies for any restrictions on applying pesticides.

Insects
Our little friends are also waking up, so be on the look out for Mole crickets, Armyworms, Cutworms, Chinch bugs, Sod webworms, Rhodegrass scale (mealy bug) and White grubs.

Diseases
These diseases could possibly occur in this time frame:

- brown patch
- dollar spot
- fairy ring
- pythium blight

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Experts on the Field, Partners in the Game

upcoming meeting

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June 25, 2015

10am-1pm

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Cost
FREE to any
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Includes lunch and tour

Kindly RSVP before June 11, 2015. Contact Rob Julian email rjulian@buccaneers.nfl.com. Become a member and save... send your membership application to Rob at 3302 West Martin Luther King Blvd Tampa, FL 33607.

Florida Statewide Chapters
SportsTurf
MANAGERS ASSOCIATION

Florida STMA Chapter Application Form

Name: _____ Title: _____

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Florida's STMA Chapters welcomes new members. We are a very inclusive organization and have a membership category for anyone interested in learning more about sports field management.

____ **$50 Sports Turf Manager** - If you are primarily responsible for managing or maintaining a sports field(s). This position is an eligible voting member and hold elective office.

____ **$35 Sports Turf Manager Associate** - If you are primarily responsible for managing or maintaining a sports field(s) and your organization already has a Florida STMA chapter member employed. The Associate(s) has the same benefits and privileges as the Sport Turf Manager. Dues are lower because of multiple members (groundskeepers, turf specialists, grounds maintenance, etc.).

____ **$50 Academic** - If you are in teaching, extension or research. This position is an eligible voting member in the Chapter and hold elective office.

____ **$75 Commercial** - If you work for a company engaged in a commercial enterprise providing services and/or products to the sports turf profession (consultants, architects, designers, contractors, management companies, distributors and manufacturers, etc.). This position is an eligible voting member and can hold elective office available to the commercial category.

____ **$50 Commercial Associate** - If you are the 2nd person (or more) from a commercial company. All Commercial Associates **must** first have a Florida STMA Chapter commercial member at their company before the lower dues category can be selected. This is a non-voting member and not eligible to hold office.

____ **$35 Affiliate** - If you are indirectly or on a part-time basis involved in the maintenance/management of sports field(s) (coaches, athletic directors, volunteers, or full-time students). This is a non-voting member and not eligible to hold office.

After being accepted for membership, members of any Florida Chapter have the same member benefits and privileges in all chapters except the right to vote and hold office.Voting rights and right to hold office are restricted to a member's home chapter, defined as the chapter to which member's dues are paid. Members may only claim Home Chapter membership in a single chapter.

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