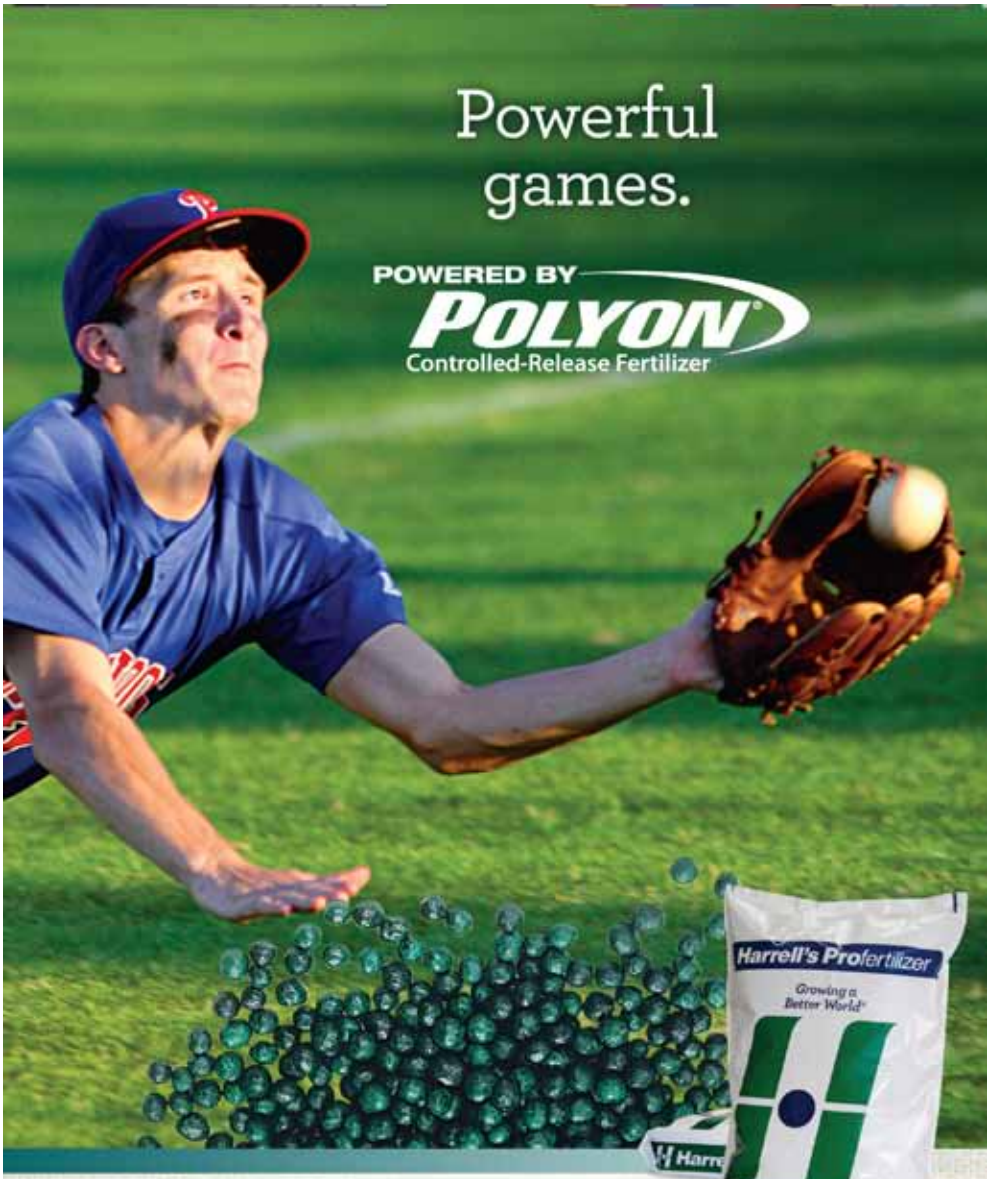
WINTER 2015

ON THE TURF™

THE OFFICIAL PUBLICATION OF THE FLORIDA CHAPTERS OF THE STMA

INSIDE THIS ISSUE:

The EPA Tier 4 Standard
Impact on the Turf Industry



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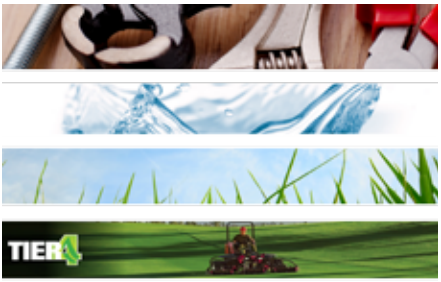

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PRESIDENT'S MESSAGE
CFSTMA

Hello, Turfers. Can you believe that another year has gone by? I honestly find it hard to believe myself. This year for the CFSTMA Chapter has been a very busy one. We got our email address up and running. The website CFSTMA.org is now also up and running. And yes, this is the fourth and closing edition this year of **ON THE TURF**. The good news is we are able to continue on next year with **ON THE TURF**, which may I say great job and HUGE thank you for all the help and support of those that were involved.

I also want to take a moment and say THANK YOU again to each person that helped to make the CFSTMA meetings a huge success. From the fantastic educational presentations, to the superb facilities we visited and of course all the great food we enjoyed along the way and to each and every one who took the time to attend.

I also would like to let everyone know that in September 2015 at the FTGA conference all three Florida STMA chapters were able to sit down and talk about how we can make our organizations even stronger and more beneficial to you, our members, who are the back bone to our Chapters.

Remember "The key to your success is the key to our success".

With all of this being said, I have to remind everyone in all the chapters that it is also time to take a moment

and renew your memberships and bring a buddy on board.

Here at the CFSTMA Chapter it looks like we will end the year with 98 members! How cool is that. However, we missed the 100 mark by only two memberships, so close.

Let's make it a chapter challenge that not only will we hit the 100 mark in 2016 but we will also shatter it.

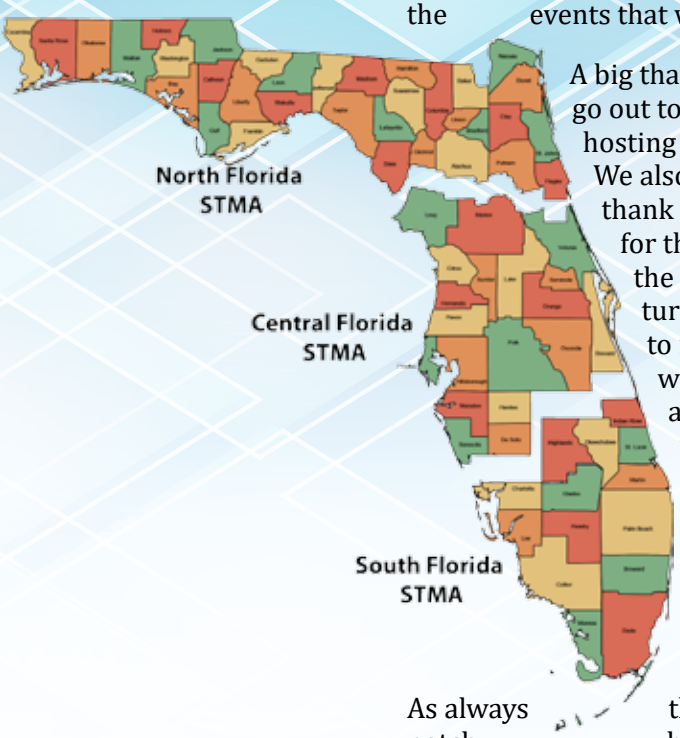
For those of you in the CFSTMA Chapter if you will go to CFSTMA.org and click on the membership tab, you will find the application to renew online and also PayPal is up and running so you can pay for the memberships there as well.

So let me close by saying that I hope everyone has a wonderful and safe holiday season. I look forward to seeing everyone in 2016 as one of the chapter members and greeting many new faces along the way.

▶Dale Croft
CFSTMA President

CHAPTER NEWS

Hear Ye. Hear Ye. The CFSTMA Chapter meeting that was held on September 22, 2015 at Bright House Field the Phillies Spring Training field was a colossal success just like all of the events that we have.



A big thank you needs to go out to Doug Kemp for hosting the event at this site. We also need to express a thank you to Opie Cheek for the unlimited behind the scenes tour and turf tips. We can't fail to recall how this wouldn't have been a complete event unless we had our FDACS expert Paul Mitola and the great CEU presentation on product labels and FDACS Updates.

As always the lunch was top notch which we have to say thank you to John Ferguson with Profile Products for all the foo. I almost thought Thanksgiving had come early with all the food that was there.

I have a special thank you and that is to the person who put our name in lights for this event that was a really cool surprise.

Before I close, I also have to give a shout out to all the commercial members who donated prizes for our raffle.

In case I have forgotten to say Thank You to anyone let me just say one last Thank you to everyone who helped with this event and to all of you who were able to attend the event, together we make one Great Team!!

HELP YOUR TURF EQUIPMENT

PERFORM BETTER AND LAST LONGER

▶By George Lawson
Jacobsen Division of Textron

It's a good idea to revisit your equipment maintenance procedures from time to time.

Are your equipment maintenance personnel doing the maintenance procedures as you may have outlined?

Proper equipment maintenance procedures will help insure good daily equipment performance and provide longer life for your grounds equipment.

Whenever I deliver a new piece of equipment to my customers I like to review some of its basic safety, maintenance and adjustment items for that machine, but with a specific reminder - "read your new Owners Manual" to get all the information. Those manuals are pretty boring stuff, let's face it, most of the information in there seems pretty generic. However, the importance of reading the manual is to find and understand those specific maintenance

requirements and adjustments that may be different from other similar types of equipment you may have.

I also recommend downloading an electronic copy of Owners & Parts Manuals for quick future access from your computer.

When reading a new machine manual, a couple areas to watch for:

1. Recommended engine oil for your climate plus the change interval.

2. Where are any lube points/ grease fittings? Take note of the number of fittings so you know how many to look for each time you're servicing the machine.

3. The type of oil the hydraulic system uses. (Quite a few variations)

4. What are the primary adjustment areas and how often should they rechecked?

5. What wear parts should you keep in your stock?

Many equipment maintenance software programs are available to help remind you of upcoming maintenance intervals. If you don't have access to something that fancy, you can use a marker board or post the manufacturer's charts on your shop wall.

Here's a quick review of some Basic Maintenance considerations:

Lubrication - More critical on most turf equipment than some other types of equipment because of the harsh environment turf equipment operates in. For instance on mowers the rollers and wheels run on or near wet grass that may have residue of fertilizer, chemicals, sand and dirt. Roller bearings turn thousands of RPM's in these tough conditions while supporting reels or rotary decks. Proper lubrication as well as checking for bearing wear insures quality cutting appearance.

Your equipment's maintenance specs may require several different lubricants on different areas of the same machine based on things like temperature range, petroleum based or synthetic, etc. Check that your personnel have all the various lubricants they need.

Filters – Do you really need to use the manufacturer's original filters? You do if that is a condition of the manufacturer's warranty. Otherwise, be aware that while many replacement filters may have the same physical dimensions as the original, their specifications may not be the same. Oil filters can vary in flow rates and micron filtration rate. Air filters can vary in filtration area and micron filtration rate also.

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Hydraulic Systems – It is critical to know the specific hydraulic fluid used in each of your pieces of equipment. Several different types of hydraulic fluids are used in turf equipment. It is imperative to use the recommended hydraulic fluid when replacing. Many times hydraulic fluid is specifically matched to the internal pump and motor components.

The viscosity, temperature range, and basic chemical makeup, biodegradability, etc. are the basic specs of hydraulic fluids. Yes, there may be a biodegradable oil choice for your machine. Biodegradable oil is designed to limit turf damage in the event of a leak or spill.

Generally hydraulic fluid change intervals are annual but may vary on some equipment or by a maximum hour interval. Hydraulic fluid level should be checked routinely and when the machine is cold since fluid expands when hot. Hydraulic fluid level normally should never go down since hydraulic fluid is not consumed. If hydraulic fluid level is going down you've got a leak! Need to look for a wet area or dirt accumulation somewhere. Ideally hydraulic hoses should be replaced before they would ever leak or break. Inspecting hydraulic hoses periodically will allow you to spot any cracking from UV or chafing if hose routing has moved because of things like a missing tie wrap, thus avoiding hoses breaking.

Rotary Blades – Sharpening blades to get good finish appearance may seem obvious, but be sure your personnel are balancing blades as well. Out of balance blades wear out spindle bearings prematurely. There are several commercial blade balancers on the market. You can also simply attach a bolt horizontally to a work bench to hang a blade on. Then you can see if a blade placed on it stays level or has a heavier end that swings downward.

Reels – As with rotary blades, sharpness equals a better finish appearance. Now with built-in, power backlapping on almost all equipment, sharpening is easier than ever. Reel to bedknife adjustment needs to be checked fairly frequently to insure cutting quality as well and to avoid excessive reel wear from overadjusted reels.

Tires – Correct tire pressure prevents turf marking or tracking. It's a shame to leave unnecessary tire tracks on a well cut field. Quite often tires are actually over inflated. Tires that are too hard have less contact area, don't spread weight properly, and thus tire marks. Tires generally get over inflated when someone uses the inflation information on the tire sidewall. The sidewall information is actually the tire manufacturer's "maximum inflation pressure". Like with your car or truck, the equipment manufacturer has calculated the proper tire inflation. On your car or truck you find that info on a label, usually in the door jamb. On turf equipment the intended tire pressure is written in the Owners Manual.

Cleaning/Washing – Besides getting all of the grass residue that contains corrosive fertilizer and chemicals off your equipment, clean, new looking equipment should help give your personnel a greater level of respect for the machine they operate!

In closing……Let's face it, most of today's equipment probably costs more than the vehicle your personnel may have driven to work. Your emphasizing good equipment maintenance will hopefully increase their buy-in of the importance to your overall mission and that its another condition of their employment. ●

FIX IRRIGATION COVERAGE BY KEEPING NOZZLES ALL THE SAME

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

We take irrigation for granted when it seems to be working. When it's not working, it's a huge trouble to figure out what's going on. So why fix the irrigation when it's not broken?

The truth is that your irrigation system may not be broken but may have poor distribution that won't be visible until March, when the fields really need good irrigation coverage. Winter is a time for Florida Sports Turf Managers to diagnose and retune the irrigation system, before the regular seasonal moisture deficit, and before dry spots appear in March. That's when grasses in Florida start to grow faster, and rainfall can't keep up with evapotranspiration, the water the turf actually uses.

With poor irrigation distribution uniformity, some parts of the sports turf field get too little water, and a host of dry loving weeds such as southern sida and Old World diamondflower invade. Meanwhile, other parts of the field get too much water, leaching valuable nutrients out of reach of the roots. Nitrate and potassium are very leachable from sand soil. Wet areas encourage growth of water-loving weeds such as doveweed and dollarweed. With poor irrigation uniformity, you pay more for fertilizer, get worse quality turf, and have a difficult time controlling weeds. And that's even before considering the problems of field damage from sports played in areas that are wet and prone to compaction, and dry areas with poor cohesion, sand movement, and resulting bald patches from field use.

The #18 (dark blue) nozzle on RainBird 6504 sprinkler heads delivers a radius of 63 feet at 60 psi. With a flow of 17.1 gallons per minute, if these heads are on a square spacing at the radius of throw, they will provide a precipitation rate of 0.83 inches per hour, at 180-degree (half-circle) operation.

In my experience, poor irrigation coverage is common in Florida sports turf fields, and a big problem. The good news is that the diagnosis is usually simple and clear, and the solution is often as inexpensive as changing sprinkler head nozzle sizes to bring everything to the manufacturer's nozzle performance specifications, with consideration of head spacing and pressure at the nozzles.

Irrigation manufacturers give us a very powerful tool for achieving irrigation uniformity, as nozzle performance charts in catalogs. Nozzle performance charts tell the radius of coverage for a particular nozzle at a particular pressure. For square spacing, assuming zero wind, sprinkler head spacing should be the radius of throw, or "head-to-head" coverage.

For example, a RainBird Falcon 6504 series sprinkler head with #18 nozzle (dark blue), at 60 psi (pounds per square inch) delivers a radius of 63 feet, which is the maximum distance the heads should be away from each other, in both directions. In contrast, the Hunter I-40 series head with #8 nozzle (light brown),

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at 60 psi delivers a radius of 46 feet. These two head-nozzle combinations deliver similar precipitation rate, 0.83 inches/hour and 0.84 inches/hour, respectively, in 180-degree operation. But, while each is good in some situations, they are totally incompatible with one another on the same zone, because there is no acceptable spacing for these two heads in the same zone.

Amazingly, I frequently see Hunter, RainBird, Toro, and K-Rain, mixed in the same zone, and sometimes as many as eight sprinkler head-nozzle combinations mixed in the same field. The explanations for switching brands and nozzles vary. An explanation is lack of availability which is amazing because you can get practically anything in the world delivered to your doorstep within a couple days. A less obvious but also misguided explanation for upsizing nozzles is,

"Well, I wasn't getting enough water in certain areas, so I increased some heads to a larger nozzle."

Unfortunately the logic behind

The #8 (light brown) nozzle on Hunter I-40 sprinkler heads delivers a radius of only 46 feet at 60 psi. Radius can be increased to 62 feet, comparable to the RainBird, using the #23 (dark green) nozzle, but this creates a new and worse problem that, if there are many heads on a zone and pipes are not large enough, flow will exceed the safe limit of 5 feet per second, and nozzle pressure will go down due to friction loss in pipe, and there will consequently be worse irrigation coverage, not better.

With too many sprinkler heads on a zone, which can occur from inappropriate upsizing of nozzles, as was done here, there may be excessive flow, pressure loss, and no head-to-head coverage. Visually observing irrigation head coverage is a first step in diagnosing and solving potential irrigation system uniformity.

this is at odds with the fact that this well-intentioned effort destroys irrigation uniformity. Let's look at the nozzle performance charts to understand how flow rate is affected by changing nozzles.

The RainBird heads with the dark blue nozzles deliver 17.1 gpm (gallons per minute) and the Hunter heads with light brown nozzles deliver only 9.2 gpm. Increasing the Hunter heads to the #23 (dark green) nozzle increases the radius to 62 feet, very close to the RainBird head, and now (the theory goes), those dry areas should be getting enough water. The resulting precipitation rate is a little high, 1.07 inches/hour, but isn't that what we wanted to accomplish?

But besides the incompatibility of these two head-nozzle combinations in the same zone, we've created a new problem. The flow rate of the Hunter heads has been increased from 9.2 gpm to 21.3 gpm. And total gallons per minute flowing in pipes greatly affects performance because friction loss (loss of pressure of flowing water in pipes) gets much larger with increases in flow.

Imagine a zone with a 3-inch main line supplying ten such sprinkler head-nozzle combinations, and the pump is 500 feet from the zone valve. First, a flow of 213 gpm for all ten heads would cause water velocity of 9 feet per second in Schedule 40 pipe. Anything above 5 feet per second is enough to cause, turbulent flow, cavitation, water hammer, surges, ruptured main lines, and broken main line fittings. Second,

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This sports turf field irrigation system had pressure less than 20 psi at the nozzles, due to too large nozzle sizes. Measurement of pressure at the nozzle is an excellent way of diagnosing and solving potential irrigation system uniformity because insufficient pressure can be caused by excessive friction loss in pipe due to excessive flow.

Accurate assessment of irrigation distribution uniformity can be conducted with tapered, graduated catch cups placed at regular distances, and it can be done also with inexpensive refreshment cups as long as they are carefully set and/or weighted to stay level.

after upsizing the nozzles, the increase flow changed friction loss of pressure in the main line from 4 psi to 18 psi, and a net reduction of 14 psi. The consequence of upsizing nozzles, causing too much flow, and reduced pressure, is that sprinkler heads that were designed for certain pressures are no longer working at that manufacturer's recommended pressure. So if in March all you see in the sports turf is green donuts surrounded by brown, it's the result of good intentions and not looking to the manufacturers' charts.

Unfortunately, many irrigation systems are low-bid ventures and pipe size is chosen to be barely sufficient to supply the originally intended irrigation sprinkler head-nozzle distribution. Over time the pumping system may no longer provide the same flow and pressure. As performance deteriorates, nozzles are upsized in a desperate move to provide longer throw.

Sometimes there are not enough hours of irrigation time, within water restrictions, to irrigate the fields, so zones are "piggy-backed" together, essentially doubling the flow rate. ●

My Recommendations

1. Do not mix different sprinkler head manufacturers and nozzle sizes in the same zone.
2. Make sure that all heads and nozzles in a zone are suitable for the pressure and spacing based in nozzle performance charts.
3. Do not try to solve an irrigation coverage problem by selectively upsizing nozzles; you will only make matters worse.
4. Be very conscious of the limitations of the distribution system in terms of main line pipe size and flow rate from having too many sprinkler heads in the same zone, with too large a nozzle sizes.
5. When there are problems due to inadequate pressure, check the flow rate per zone relative to pipe size, and make sure that zones are not inappropriately "piggy-backed."
6. Measure pressure with a gauge downstream from the pump and use a pressure gauge and pitot tube to measure pressure at the nozzles. Do an irrigation distribution uniformity test, or cup catchment.
7. Make sure to keep the "as-built" irrigation drawings and, as there are repairs or changes in the irrigation system, or as you diagnose and solve problems, write down your irrigation system findings so you will have a map of sprinkler heads, nozzles, and experiences.

PRE-EMERGENCE
PREVENTION IS BETTER THAN CURE

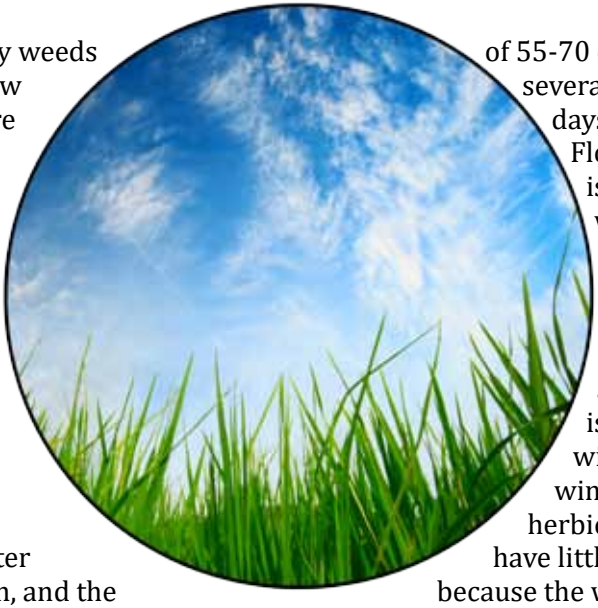
▶By Grantly Ricketts
UF/IFAS Extension
Osceola County

Weeds are unsightly and undesirable plants that grow where they are not needed. Weeds often grow faster than the desired turf grass, compete with the grass for nutrients, water, and light. If weeds are left uncontrolled it will result in the deterioration of the athletic field over time. Because weeds grow faster than the desired plant, turf area with infested weeds has to be mowed more frequently than areas with little or no weeds. Weeds tend to infest turfs that are sparse and poorly established and maintained; this occurs because sunlight freely penetrates the soil surface and helps to promote the germination of weed seeds.

There are two approaches to have a turf area with little or no weeds, using pre-emergence and post-emergence. Pre-emergence herbicides kill the weeds before they emerge from the soil while post-emergence herbicides kill weeds after they have being established. The pre-emergence approach is the best method because "an ounce of prevention is better than a pound cure." Please note that pre-emergence herbicides do not prevent germination but rather kill weeds shortly after they germinate.

It is very important for a field manager to first consider Integrated Pest Management (IPM) prior to using any pesticides. Cultural weed control is very important; for example the field manager should routinely scout the

field to identify weeds and to note new species that are present. Early detection is critical to prevent the spread of problem weeds. It is proven that weed populations are influenced by irrigation; how much water per application, and the frequency, can help determine the level of weed infestation. In 2006, Busey and Johnston from the University of Florida established that daily irrigation influenced the occurrence of dollar weed in St. Augustinegrass. In addition, wet soil makes the turf conducive for sedges, such as purple nutsedge and kyllinga. Cultural practices cannot be overemphasized because one should not only depend on herbicide to prevent or fix weed problems.



Let's get back to pre-emergence. In order to effectively prevent the target weeds from emerging, the turf manager must acquire the basic knowledge and understanding of the temperature requirement for the target weed to germinate. Knowledge of whether the weed is a winter/summer annual is vital. For example, crabgrass which is a summer annual will germinate when there is temperature range of 55-70 degree F for several consecutive days. In Central Florida, there is a narrow window of time to apply pre-emergence herbicide. If application is not done within that window, the herbicide will have little or no effect because the weeds already started growing. Application must be done prior to weed emergence so predicting the weed life cycle is absolutely vital in applying pre-emergence at the right time. Monitoring the soil temperature in the upper half inch of the soil is an excellent way to determine when the right time to apply pre-emergence.

It is also important to note that there are winter annuals and summer annuals. Most winter annual weeds start germination in fall and growth continues until late spring to early summer. In Central

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FOR ADDITIONAL INFORMATION

Contact Grantly Ricketts, UF/IFAS Extension in Osceola County at 321-697-3000 or email gricketts@ufl.edu.

Florida, to have proper control of winter annual weeds, it is best to apply pre-emergence in mid-October into the middle of November. After applying pre-emergence, a ¼ inch of rainfall is required within 7 days of application for the pre-emergence to be activated. If rainfall is not available the herbicide should be thoroughly watered in with a sprinkler. Irrigation/rainfall moves herbicide into the root zone area of the soil. Too much rainfall will wash pre-emergence off target site and also result leaching. It is important to note that not every weed can be controlled by pre-emergence. Pre-emergence does not have any effect on perennial weeds such as sedges and white clover that are established from vegetative reproduction.

All pre-emergence are not made equal! Each pre-emergence has different residual effect and persistence is the key to residual activity. Persistence of pre-emergence is linked to the rate of microbial activity and also temperature; there is less residual activity in summer than in spring. In addition, it is important that the field manager properly identify the turfgrass species; not all herbicides are made for all turfgrasses. For example, atrazine (pre-emergence) should be used in Centipede grass and St Augustine grass but will severely injure Bermudagrass and Bahiagrass.

Choosing granular formulation over liquid formulation is of great advantages; applying granules reduces foliar contact, increases soil water concentration and has better

soil incorporation. There are many people with the misconception that liquid pre-emergence does not need to be watered in, however, the herbicide must get below the soil surface to start working.

Rotating your pre-emergence is just as important as rotating other pesticides; this will prevent the buildup of resistance to a particular pesticide. In order to effectively rotate a pesticide, the manager has to have the basic knowledge of the pre-emergence mode of action and the class which each chemical is fall under. Rotating a name does not necessary mean that you are using a different chemistry of chemical. For example, benefin (balan), pendimethalin (pendulum), and prodiamine (barricade) are from the same class which means substituting any of the above for the other would not be an effective rotation.

Over-Seeding

You should not over-seed and apply pre-emergence in the same time period. Pre-emergence herbicides will both prevent target weeds and the desired turf from emerging. Read the label for instruction on how early after pre-emergence application grass seeds can be sown.

Finally, read and follow the manufacturer's instructions placed on the label. Pre-emergence herbicides are available at your local hardware stores and commercial landscaping supplies. The following are some common pre-emergence herbicides that are available to both lanscapers and homeowners; Barricade, Galaxy, Spectacle, Dimension, Pre-M, and Pendulum. I wish you a weed free life. ●

THE EPA TIER 4 STANDARD AND THE IMPACT ON THE TURF INDUSTRY

25 – 74 HORSEPOWER DIESEL POWERED TURF EQUIPMENT EMISSIONS REGULATIONS

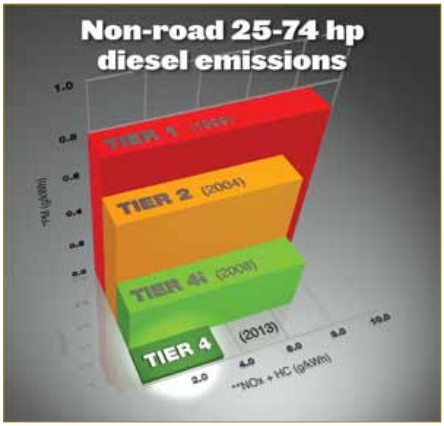
The Environmental Protection Agency's Tier 4 diesel engine emission reduction mandate may have already had an impact on your business. The good news is that all Tier 4 compliant turf equipment manufactured going forward will be better for the environment and healthier for everyone. The more difficult message to deliver is that all Tier 4 compliant diesel powered turf maintenance equipment - greater than 25 horsepower (hp) – from any manufacturer - will cost more.

This document will provide you with a basic understanding of what Tier 4 means and provide you with enough information to help you lead a meaningful business discussion within your organization regarding the possible implications to your bottom line as it relates to capital spending / ROI. If nothing else, we hope this information will provide you with a better understanding of the pending Tier 4 regulation, it's impact on the turf equipment business, and direct you to additional resources to learn more.

THE EPA TIER 4 STANDARD IS ABOUT CLEANER AIR!

All US regulated emission standards, including Tier 4, are extensions of the "Clean Air Act" (1963) which was enacted to reduce air pollution. The Environmental Protection Agency (EPA), which is the Federal organization responsible for managing and regulating the Clean Air Act, put forth a multi-year plan in the mid 1990's with "tiered" mandates to reduce the level of harmful emissions such as particulate matter (PM) and Nitrogen Oxides (NOx) that enter the air via diesel engine exhaust. The "final" and most technologically challenging implementation stage, whereby engine and turf equipment manufacturers are required to produce products that comply with these most stringent emission reductions, is called "Tier 4". The Tier 4 emission standard will reduce

already reduced emissions of PM by 90%. To give you a sense for how stringent the Tier 4 standard is, consider the fact that in many parts of the United States, the air leaving Tier 4 compliant machines will actually be cleaner than the incoming air!



WHAT EPA TIER 4 MEANS TO MANUFACTURERS

Compliance is mandatory
Compliance with EPA Tier 4, or any other Federal/State regulatory requirements, is not optional. All manufacturers must comply if they wish to continue to sell diesel powered products in this horsepower/performance range.

While Tier 4 may seem "new" to many in our business, Since the compliant engines to meet progressively higher emission standards were more easily interchangeable in the past, much of the burden to implement the required changes fell on engine manufacturers. Going forward, however, the incorporation of new Tier 4 compliant diesel engines into turf equipment requires significant equipment redesign because the level of emission reductions mandated in this stage will require more sophisticated fuel injection/ combustion systems and exhaust after treatment systems.

EXHAUST AFTER-TREATMENT FOR EPA TIER 4 SOLUTIONS

- In addition to more sophisticated engine electronics, the exhaust after-treatment is key to achieving EPA Tier 4 compliance. Key elements of the exhaust after-treatment systems include Diesel Oxidation Catalysts (DOCs) and Diesel Particulate Filters (DPFs).
- The process of removing particulate matter and NOx from the exhaust starts when the exhaust reacts with a special catalyst to transform a portion of the particulate matter into harmless substances such as water and carbon dioxide.
- The after-treatment process then pushes the remaining particulate

(continued pg. 22)

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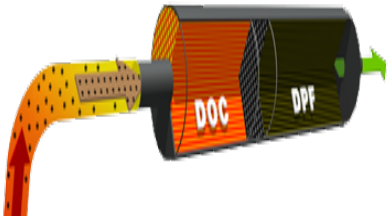

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- The process of removing particulate matter and NOx from the exhaust starts when the exhaust reacts with a special catalyst to transform a portion of the particulate matter into harmless substances such as water and carbon dioxide.

- The after-treatment process then pushes the remaining particulate matter into a Diesel Particulate Filter.

This filter uses a special ceramic wall flow filtration process that further separates particles from the exhaust.

- Finally, the particulate material that is collected in the DPF is cleaned and purged via a high temperature regeneration process. The "burn-off" of material during this process helps maintain the efficiency and efficacy of the filtering process. This is called DPF Regeneration.

Each of the new diesel engine/exhaust systems:

1. Require more sophisticated electronics [to monitor and control emissions]
2. Are physically larger in size, and
3. Have new and more expensive components [particularly in the exhaust after treatment area]

Significant redesigns were required to integrate the above Tier 4 compliant diesel engine changes with existing equipment/models. Examples include: retooled engine compartment housings, modifications to chassis frames, and re-engineered cooling systems to manage higher temperature exhaust, to name a few. In many cases over a third of the parts for a given model had to be reworked, replaced or otherwise re-engineered! Because of this, existing models were simply not "retrofit" capable.

The obvious message, which no manufacturer wants to convey, is that the design, manufacturing and component costs – to deliver Tier 4 compliant diesel powered product has increased significantly on machines manufactured in 2013. Cost reductions, while always a high priority in product redesigns, are not sufficient to offset cost increases.

STRATEGIC APPROACHES TO EPA TIER 4 COMPLIANCE

End users in other industries that have already lived through the transition to Tier 4 have taken a few different strategic approaches when developing their capital spending plans for related equipment:

- **Go "Green"** - Some end-user companies embraced the new Tier 4 product and wanted to position themselves as leaders in the "green" space. They got in line for the new products early, despite the higher prices, to lead the charge toward cleaner air.
- **Business as Usual** - Other companies chose to simply pay the market price (even if it was forecasted to go up substantially) when their current capital plan called for

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new equipment or when their equipment simply reached the end of its useful life.

- **Buy Used** - Equipment manufactured prior to 2013 is "grandfathered-in" and does not need to be retrofitted to Tier 4 standards.

- **Pre-Buy** - Many companies decided to buy equipment in advance of the mandatory Tier 4 changeover (at lower prices) to defer the need for higher priced products as long as possible and to give them more time to adjust to the new market pricing.

Even though some Tier 4i models are still available, eventually, the only option for customers purchasing diesel powered product in the 25 to 74 hp range will be to buy a Tier 4 compliant product. Therefore, the purpose of learning about this issue now is so that all customers can develop and implement an acquisition strategy that meets their specific needs.

As you review your own needs and options for capital spending on turf equipment, you may also want to consider researching how other end-user customers in other industries dealt with Tier 4 compliance.●

WHERE YOU CAN LEARN MORE

Conduct a simple internet search on EPA Tier 4 Emission Standards. There is plenty of material to help get you grounded in EPA Tier 4. The following links should help get you started:

- The Diesel Forum - www.dieselforum.org
- General info on off-road diesel engines, equipment, retrofitting, etc. - www.clean-diesel.org
- Association of Equipment Manufacturers - www.aem.org/SRT/Regulatory/Tier4/
- Bobcat Website - Tier 4 Content - www.bobcat.com/excavators/tier4
- Catepillar websites - www.cat.com/technology/acert-technology
- Cummins Website - www.tier4.info

Central Florida Chapter SportsTurf MANAGERS ASSOCIATION

Experts on the Field, Partners in the Game

5th Annual Field Day

(with vendors, ceu's and a tour)

January 12, 2016 | 8:00am-2:00pm

Disney's ESPN Wide World of Sports Complex

700 S. Victory Way, Orlando, FL 34747 at Champion Stadium

Two 1-hr. CEU Classes -
Diagnosing Turfgrass Problems - Celeste White, UF/IFAS Extension Agent
Weed ID and Management - Annie Nsafoah, Dow Agro Sciences

Join us in Orlando for the **5th Annual Field Day** *- receive CEU's, visit vendors and get a tour of Disney's ESPN Wide World of Sports Complex.*

Attendee Cost

☐ Members ($25)
☐ Non-Members ($35)

Vendor Cost

☐ Table top and 2 meal tickets ($150)
☐ 60 x 60 plot and 4 meal tickets ($300)

Additional Meal Tickets

_____ Additional Meal Tickets ($10/ea.)

Please visit our website (www.cfstma.org) to register and supply payment.

Professional

MEMBER SPOTLIGHT

Roy Peters

I grew up on a small cotton and soybean farm in Northeast Louisiana. Being one of nine children, I had the misfortune of having all my decisions made for me. On a family farm you are required to operate equipment at a very early age. I can remember driving an 8N Ford tractor while my brothers and sisters pulled the corn and put it in a trailer towed behind the tractor. Getting involved in the care and maintenance of turf was more or less a natural thing for me to get involved in.

I have been a part of the athletic programs at Freedom High School since it opened in 2003. I became the assistant athletic immediately and started my career taking care of the fields at Freedom. I have had to change my philosophy on grass. On the farm we fought grass in the crops with the hoe and chemicals trying to eliminate it. Now I am trying to grow it.

At Freedom we have a well that supplies the water used to irrigate the fields. All of our fields are irrigated except two that we use sparingly. I have had thoughts of trying to irrigate those but have not come up with the funds to do so. Trying to water the fields we have irrigated has proved to be a challenge especially during the dry times of the year with athletic events taking place on the main athletic field and practice taking place in the afternoons.

Our fields are Tifton 419 with the

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Commercial

MEMBER SPOTLIGHT

Nick Pappas

Originally a New England native, I am currently serving as the Sports Turf Manager for GreenSource Landscape & Sports Turf out of Broward County. I manage more than 100 acres of bermudagrass and paspalum located throughout the tri-county area of South Florida.

I began my journey into the turf industry when working for a private country club in Connecticut before attending the Stockbridge School of Agriculture at the University of Massachusetts. There I earned my bachelor's degree in Plant, Soil & Insect sciences with a concentration in turfgrass management. I found my passion for sports turf management while interning with the Washington Nationals in our country's capital. A few short months after graduating from UMass I took a position working on the Miami Dolphins' grounds crew. I made the 1,500 mile drive south and haven't looked back.

While working for the Dolphins, I was fortunate enough to get on board with the grounds crew at Marlins Park, home of the Miami Marlins, where I still currently work part-time during the baseball season.

Since taking on the responsibilities of creating and managing agronomic programs for multiple fields in various locations, I have found myself constantly researching new, innovative ways to manage natural grass fields. Incorporating innovative cultivation practices, planting new varieties and cultivars of turf or installing hybrid systems has helped ensure my fields can take more!

My education was based up north on cooler varieties of turf; however after spending the last three years in South Florida I had no choice but to adapt quickly and learn to manage Bermudagrass and other warm season varieties. With all the new technology and innovation happening in the industry it is exciting to see to what level we can take natural grass maintenance.

As one of the directors for the South Florida STMA chapter, I get the opportunity to reach out to many different athletic field

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

Roy Peters

exception of the game field which has Celebration on it from hash to hash and goal line to goal line. My dream field would have Celebration from one end to the other. I like the color and the recovery after athletic events.

I have seen the results of cultural practice this year. We were able to deep tine aerate, shallow tine aerate, verti-cut and top dress and it has made a tremendous difference. My plan is to be able to do this on a yearly basis. Because of the lack of funds, these events had not taken place earlier.

My practice fields are also used by the Physical Education Department at Freedom for sports such as football, soccer, flag football and lacrosse. As you can see the fields don't get a lot of down time. I do schedule times during the summer when we do the cultural practices, that teams are not allowed on the fields . This takes a bit of creative scheduling but it can be accomplished.

I had one student two years ago who was really interested in the turf maintenance program here at Freedom. He graduated and currently has a job with a lawn care company. He was really a hard worker and I miss him tremendously. ●

Nick Pappas

managers across the state. This allows us to continuously learn from and educate each other on how to provide safer, higher quality athletic fields.

When I'm not managing grass, you can typically find me at the gym. To me, life is all about consistency and balance. My passion for the gym has taught me to apply the same approach at work, both as a manager to my employees and as a manager to my fields. Daily, consistent hard work is key and success will follow.

My weekends are spent washing my cars, relaxing on the beach with friends and submersing myself in all things Boston sports. If there is one thing I have learned from being a long time Red Sox and Patriots fan it's that no one person is ever bigger than the team.

Although far away, I am lucky enough to have an extremely supportive family and I owe my young (and hopefully growing!) success to them.

Stay Humble, Stay Hungry! ●

On the Turf Tips from STMA

Here are a few tips from STMA on the care of your cool 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.

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

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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 prologns 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 oftern a part of IPM programs, but they are selected and applied responsibly to avoid health risks to other living organizms than those targeted. It is important to routinely scout the fields and identify the pest problem in the early stages. ●

Upcoming INDUSTRY EVENTS

5th Annual Field Day - January 12, 2016

Disney's ESPN Wide World of Sports Complex

Join us in Orlando for the 5th Annual Field Day – receive CEU's, visit vendors and get a tour of Disney's ESPN Wide World of Sports Complex.

Two 1 hr. CEU classes –

- Diagnosing Turfgrass Problems – Celeste White, UF/IFAS Extension
- AgentWeed ID and Management – Annie Nsafoah, Dow Agro Sciences

Register online at cfstma.org - you don't want to miss this! ●

CFSTMA Chapter Meeting - March 2016

Raymond James Stadium Tampa, Florida - One Buccaneer Place

CFSTMA Chapter Meeting - June 2016

University of Central Florida

Topic: Fraze Mowing

Central Florida Chapter SportsTurf MANAGERS ASSOCIATION

Experts on the Field, Partners in the Game.

Application is due by 1/12/16. Scholarship recipients will be notified by 3/16/15.

Educational Green Industry Grant Scholarship

CONTACT INFORMATION		
Name:		DOB:
Current address:		
City:	St:	ZIP:
Phone:		E-mail:
EMPLOYMENT INFORMATION		
Employer:		Currently employed here: Y N
Employer address:		
Date of hire:	Phone:	E-mail:
City:	St:	ZIP:
Position:		
REFERENCES – Please provide references from two turfgrass professionals (i.e.: professors, supervisors, etc.)		
Name:	Phone:	E-mail:
SPONSOR – If you are not a member of CFSTMA, you need to be sponsored by a member. Please list your sponsor:		
ESSAY QUESTION – How do you plan to use this grant to improve your knowledge of sports turf management? (attach essay separately)		

I certify that the information above is correct to the best of my knowledge.

Signature_____ Date _____

Please email application, essay and the letters of recommendation to:

Dale Croft, CFSTMA President

Centralfloridastma@gmail.com

Or mail— 1932 Bel Air Ave, Orlando, FL 32812

Florida Statewide Chapters
SportsTurf Managers Association
Experts on the Field. Partners in the Game.

Florida STMA Chapter Application Form

Name: _____ Title: _____

Employer: _____ _____Contact Phone: _____

Address: _____ City: _____

Zip: _____ Email : _____

If vendor, type of business: _____

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.

☐ North Florida

Make checks payable to:
North Florida STMA and mail to
NFSTMA
1471 Capital Circle NW, Ste. 13
Tallahassee, FL 32303

☐ Central Florida

Make checks payable to:
Central Florida STMA and mail to
ATTN: Rob Julian
3302 W. Martin Luther King Blvd.
Tampa, FL 33602

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