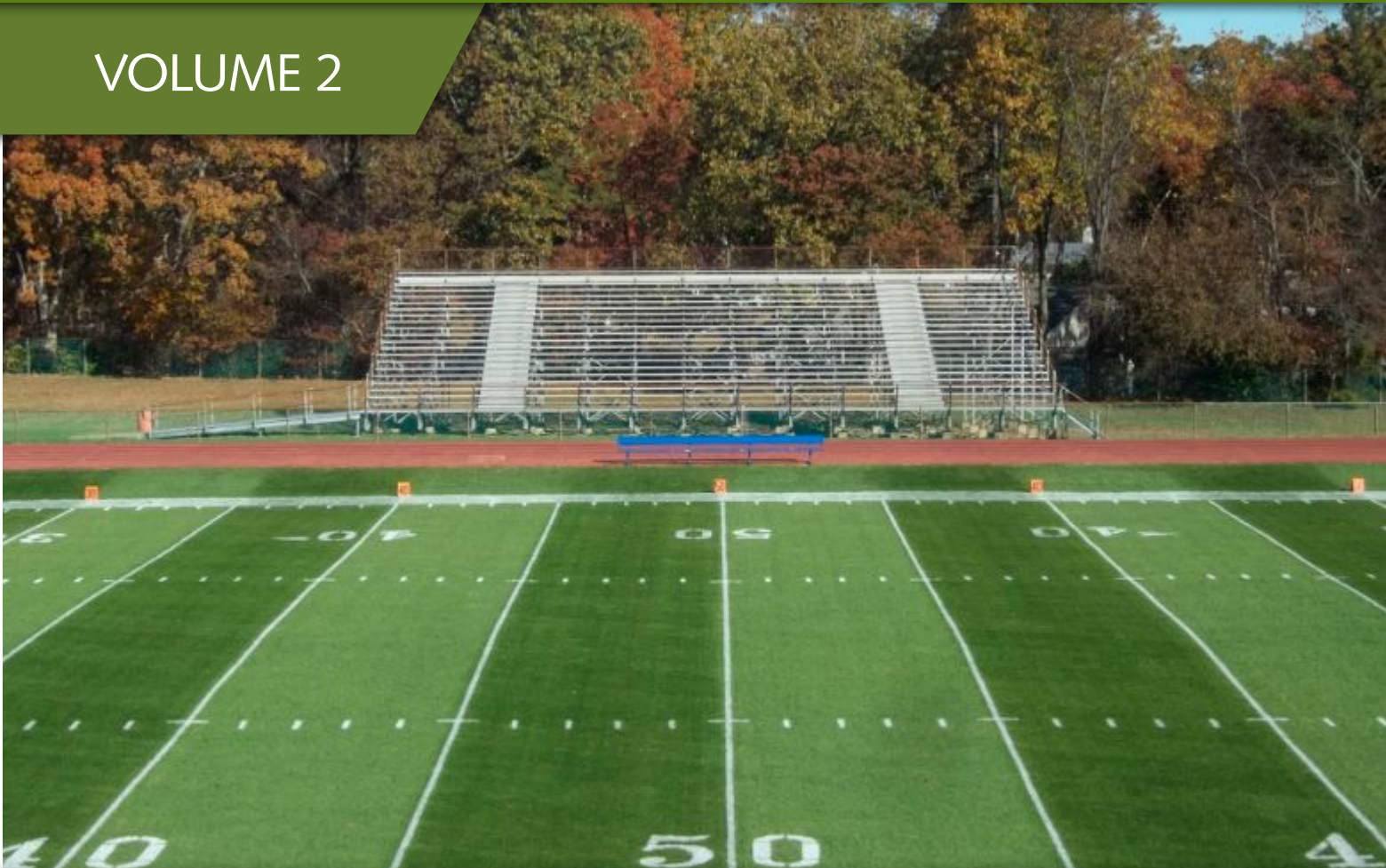


Digital Guide TO GRASS FIELD MAINTENANCE

VOLUME 2



CONTENT PROVIDED BY THE STMA

SportsTurf
MANAGERS ASSOCIATION

PARTICIPATING COMPANIES:



GRASS SPECIES SELECTION

PART 1

Dr. Mike Goatley Jr., Professor at Virginia Tech College of Agriculture and Life Sciences, and Melanie Stanton, Executive Director of Turfgrass Producers International (TPI), address some of the qualities required for healthy, strong natural grass athletic surfaces and the research and outreach programs currently being done to meet those needs.

Melanie Stanton:

I've been speaking with turfgrass growers about what their customers need for healthy, green athletic fields. A significant number supply and install the sod used on the athletic fields for professional teams, schools, and municipalities. With questions arising about the potential health risks associated with playing on artificial turf, turfgrass growers are preparing for the demand for natural turfgrass to increase.

What am I hearing from turfgrass growers?

1. They need “clean” seed: grass seed that is free of weeds. Weeds are becoming harder to fight because of herbicide bans. Plus, using chemicals is an expensive endeavor. In addition to the cost of purchasing chemicals, there is the cost of personnel to apply them and the cost of downtime while the field can’t be used for play or activities. And the public holds an unfavorable view of herbicides, despite the science showing that the low level of chemicals used to maintain turfgrass is well within safety specifications.

Weeds also contribute to dangerous playing surfaces. A study from the Ontario Turfgrass Research Foundation showed that athletes who play on grass that contains weeds show higher injury rates than athletes who play on well-maintained grass or artificial turf. Recent research from the University of Tennessee reported that surface hardness values on large crabgrass and white clover plots as compared to a dense bermudagrass canopy were 48 to 52% higher than the bermudagrass turf. The Tennessee findings indicate that groundcover domination by weeds such as crabgrass and clover compromises the aesthetics and safety of natural grass athletic fields. Weed-free grass also allows for more predictable ball reaction, better player traction and is more aesthetically pleasing for players and fans.

2. Similar to the need for clean grass seed, field managers seek grass that will resist pests. All the reasons for not using herbicides hold true for pesticides. In addition to insects, turfgrass producers seek grasses that won’t attract critters because a safe playing field doesn’t have holes or subterranean tunnels that can cause a player harm.
3. In increasing numbers, and especially as the drought in the western United States continues, turfgrass growers are looking for grass varieties that act like a camel: storing water in an extensive root system for long-term use and requiring less irrigation. Drought-resistant grass varieties demonstrate strong stewardship of the environment as well as economic benefits, since the cost to irrigate fields can be very high.
4. In other climates, turfgrass producers look for grass varieties that will survive in cold temperatures and high winds. In the northern United States, with baseball being played from April to October, football played August into January or February, and soccer from March to November (not to mention field hockey, lacrosse, tennis, golf, etc.), athletic fields need to stand up to extreme weather conditions.

What types of research and outreach programs are currently being done to address these needs?

Dr. Mike Goatley, Jr. with Virginia Tech College of Agriculture and Life Sciences responds:

One important part of university extension outreach programs is to continue to educate the public regarding the 'science' behind the use of pesticides. In my opinion as a university turfgrass extension specialist, it makes sense from both environmental and economic standpoints to reduce pesticide use on sports fields as long as one thing is not compromised: player safety. During a time when pesticide use is being restricted and/or banned on athletic fields nationwide, it is of even greater importance to educate the general public about realistic expectations of safety and performance of pesticides. Clearly, one can never say there is no inherent risk with pesticide applications; applications of pesticides that are not warranted can be a mistake. One of the problems in sports turf management is that the grass and pest responses to some synthetic pesticides is so 'spectacular' in their performance that these chemicals are viewed as a cure-all for problems on the field. Nothing could be further from the truth because no chemical application can mask other limitations to the field (things such as soil

compaction, poor drainage, etc.). The importance of having a healthy soil can never be replaced by any chemical additive. At the same time, there are countless examples where preventative applications of pesticides in anticipation of a pest outbreak based on environmental conditions, past history of a location etc., can improve sports turf playability and safety, and reduce total amounts of pesticides that otherwise would have to be applied in a curative fashion. And what I think is the most pressing challenge of all is not compromising sports field safety for the sake of being 'pesticide-free'. When evaluating risks, I hope that people will truly consider all sides of the argument.

With an expanding focus on doing more with less across the board, we hear a great deal about terms such as 'BMPs' and 'IPM'. These two acronyms (standing for Best Management Practices and Integrated Pest Management) go hand in hand. For both strategies, the idea is that superior and safe playing surfaces are not solely based on the applications of chemicals, but rely instead upon a well-educated sports field manager that knows the basics of plant and soil science, is adept in understanding pest thresholds and whether or not treatment is warranted, and only using chemicals when field safety and playability might be compromised. When possible, it only makes sense to use chemicals when they are needed

so that they are truly a tool and not a crutch in an athletic field management program. And of course, responsible fertility, cultivation, and irrigation programs are essential for maintaining safe fields. These strategies are all things very familiar to a trained sports turf manager.

Some of the most beneficial strategies I have witnessed in tackling sports field management issues with limited or no availability of pesticides is in the state of New York. To combat management limitations due to pesticide bans, their strategy involves regular regrassing, primarily through repeated seeding events (and where funds are available, the use of sod). The seeding strategy is called 'seed banking' and it essentially involves regularly applying small amounts of seed of fast germinating grasses like perennial ryegrass or tall fescue to the most heavily trafficked areas throughout the playing season. Essentially one does not pay attention to the calendar in applying the seed, either for the season of the year or the season of the sport. Some of the seed germinates and is worn away by the traffic, some of it hopefully persists, and some of it remains in the soil after having been worked in by the player's cleats, hopefully to germinate later on (this is the seed that is in the 'bank'). When there is no allowance for pest control with synthetic chemicals, then the regular applications of seed allow the sports turf managers to

maintain some type of a turf canopy that provides a safer playing surface.

Another approach that researchers at Cornell University have demonstrated telling success is to couple a cultural management strategy of hollow-tine core aeration (often called 'plugging') with white grub control. By tying together the timing of when the grubs are present in the turfgrass root zone with aggressive core aeration, they can physically control a large percentage of the grubs 'mechanically'. Now, this strategy requires a great deal of coordination between the sports turf manager, the field users, and yes, even the grubs, in order to have satisfactory results. However, the research data indicate that a properly timed aeration event can physically control a lot of grubs in the soil that would otherwise be feeding on the turfgrass root system. Both of these strategies show that sometimes the most successful management programs come from tweaking the simplest of standard management activities.

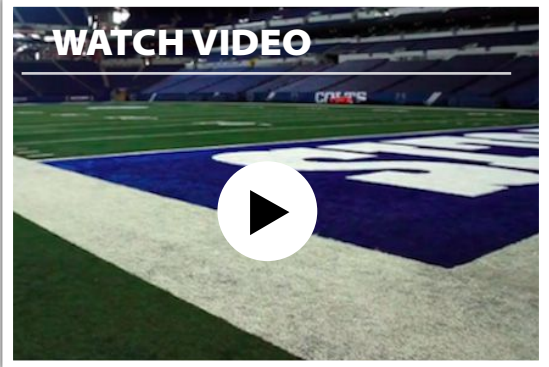
From the research side, continued improvements in grassing options is one area where sports turf managers can take advantage of the efforts of turfgrass breeders. Across the board there is a strong focus on selecting both warm and cool-season turfgrasses with enhanced drought tolerance. Particular successes have been realized with developing new tall fescue and perennial ryegrass



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varieties that perform better in hot, dry conditions, thus expanding these grasses into new markets. Conversely, these two grasses are also being selected for better cold tolerance, and this feature is moving them even further north in this country, particularly when being mixed with Kentucky bluegrass. The last major area of research and development in the world of ryegrass and tall fescue is the release of creeping varieties. Pseudo-stoloniferous (above-ground stems) varieties of perennial ryegrass and rhizomatous (below ground stems) are now commercially available, and I anticipate that progress in this area will be amazing over the next 10 years.

The preeminent cool-season turfgrass for sports fields remains Kentucky bluegrass because of its aggressive rhizomatous growth habit. These grasses are also being selected for improved water use efficiency, but one particularly exciting research area for this grass is with the significant improvements being made in selecting varieties with faster germination rates from seed. This produces a more rapid crop from sod and a more rapid athletic field if established from seed. While no bluegrass is yet competing with ryegrass or tall fescue and their 4-7 day rate of germination possibilities, some new varieties are showing germination in as little as 7-10 days rather than the standard 14-21 day period. And for more southern locations, the continued expansion of the more heat and drought tolerant hybrid bluegrasses (crosses


between Texas bluegrass and Kentucky bluegrass) are expanding in use as either stand-alone grasses or in combination with perennial ryegrass or turf-type tall fescue.

Bermudagrass remains the king of warm-season sports field grasses where it can be grown because of its superior density and aggressive growth rate from both above and below-ground stems. Researchers have made great strides in the release of ultra-dense, cold-tolerant varieties of both seeded and vegetatively-established (planted from sod, plugs, or shredded stems called 'sprigs) bermudagrasses. These improved varieties have captured a large portion of the transition zone market in the United States and creep a little further north each year. And even for a very drought tolerant grass, breeding efforts continue to identify new varieties that have greater water use efficiency. Another area to watch for: expanded uses of zoysiagrass on athletic fields. It is not a totally new concept as it has been employed sporadically on sports fields in the past, but wide scale use has not yet caught on. However, continued selection and evaluation of high density ecotypes that are absolutely loaded with both above and below-ground stems of this naturally slow growing grass indicate it might have application as a desirable sports turf grass for certain climates and sports. Slower growing



grasses that can still withstand a lot of traffic are very attractive in a time when there is great focus on reducing chemical inputs and mowing requirements. And last but not least is the continued expansion of seashore paspalum, a grass uniquely suited to many of our Gulf south states. Both sodded and seeded varieties are available of this very salt-tolerant grass. Its ability to thrive while being irrigated with non-potable (non-drinking) water sources high in soluble salts makes it a very unique prospect for expanded use on southern athletic fields, where it is especially adapted to the prolonged heat and humidity.

Factors driving the development of new and improved turfgrass cultivars include climatic conditions, environmental impacts, and human health. There is demand for very specific traits, such as improved drought tolerance, quick establishment, and increased pest resistance. Turfgrass breeders and university researchers work closely with turfgrass species to develop new cultivars. The research and development of improved species provide athletic field managers a variety of options when choosing the best turfgrass for their situation while keeping the safety and playability of an athletic surface top of mind.





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WATCH VIDEO



A Sports Turf Manager in New England uses a Model 320 Earth & Turf MultiSpread™ topdresser. He has put more than 3,000 yards of compost and a few loads of 2 mm sand through the unit so far. The field in the accompanying photo, taken immediately after a core aeration was done, has had 35 yds. of leaf compost applied each of the last three years. It gets fertilized with an organic-based program, 2 to 2.5 lbs. of nitrogen per year.

Compaction is an issue, so core aeration is used after spreading compost. The benefits of compost he has found are:

- **It reduces soil compaction**
- **It improves soil structure**
- **It improves moisture retention**

Now spraying is done only as needed, because the turf has become very thick and strong with a great root system, which can be seen in the close-up photo from the same field taken in December, 2014. Mostly leaf compost is spread and overall savings have paid for the compost in just two seasons. The use of pesticides has been reduced, as beneficial soil microbes, biology and organisms have helped the soil health.

Spreading compost, aerating and seeding have also had a big, positive effect on seed germination. This Sports Manager believes that seeding is important and advises not to skimp on the seed when planting.



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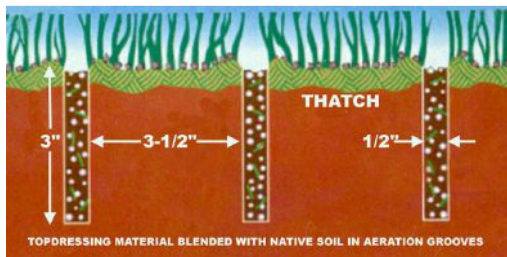
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IPM PRACTICES

Integrated pest management (IPM) is an environmentally and economically effective approach to pest management. In turfgrass management, the essential tools for a successful IPM program include the pest triangle, prevention using proper cultural practices and scouting methods, and as a last resort, the use of pesticides.

Pest Triangle

The three corners of the Pest Triangle are the Host, Pest and Environment. Only when these three components are present will a pest problem occur. Altering the environmental conditions (such as moisture, fertility, or organic matter) can minimize pest incidence. If the environment is not changed, the pest will persist regardless of the amount and frequency of pesticide applications.

Prevention

Pest prevention is a critical component to proper IPM. Prevention methods include primary and secondary cultural practices as well as regular scouting and utilizing an action threshold. There are three primary cultural practices:

- Mowing is a primary cultural practice and is the most demanding of all of the cultural practices. Increasing the mowing height and increasing the mowing frequency can help to reduce the occurrence of pests.
 - Mowing Height - Research has shown that simply increasing the mowing height on a mixed stand of cool-season turfgrass from 1.5" to 3.0" will reduce crabgrass cover by up to 52%. (Calhoun et al, 2005; Kowalewski et al., 2010)
 - Mowing Frequency - Research at Michigan State University determined that increasing the mowing frequency on cool-season turfgrass from once to twice per week increased the number of soccer games a field can host by 45% while maintaining acceptable turfgrass cover (Calhoun et al, 2002)
 - Fertilization is also a primary cultural practice, which involves maintaining adequate levels of nitrogen and monitoring soil pH; these are important for a successful IPM program. To adequately monitor soil pH, soil tests should be conducted every 1 to 3 years.
- Irrigation is the final primary cultural practice. Applying 1" to 1.5" of water per week is recommended to maintain a healthy and safe field. Drought stress between irrigation can increase susceptibility to disease.
 - Cultivation or aerification is a secondary cultural practice that relieves compaction, reduces organic matter, improves gas exchange and improves drainage.
 - Interseeding (applying cool season turfgrass seed to cool-season turfgrass stands) and overseeding (applying cool season turfgrass seed to warm season turfgrass stands) are essential secondary cultural practices.
 - Scouting and Action Thresholds are the final secondary cultural practices. Scouting simply means that someone is out looking at the turfgrass for pests at the time they typically are prevalent. Action Threshold is the pest population that is the limit of tolerance before action is taken. Sometimes action thresholds can be set for insects according to their reproductive stages. Thresholds will vary considerably depending upon the type of turfgrass, environmental conditions and cultural practices.

Pesticides

Only after you have changed the environment and/or cultural practices that have resulted in your current pest problem should you consider the use of pesticides. Otherwise, the pest will return despite regular pesticide applications. With IPM we often refer to preventive and curative applications. The best example to illustrate the use of preventive and curative applications is weed management. Some weeds are best controlled with post-emergence; some weeds are best controlled with preventive applications.

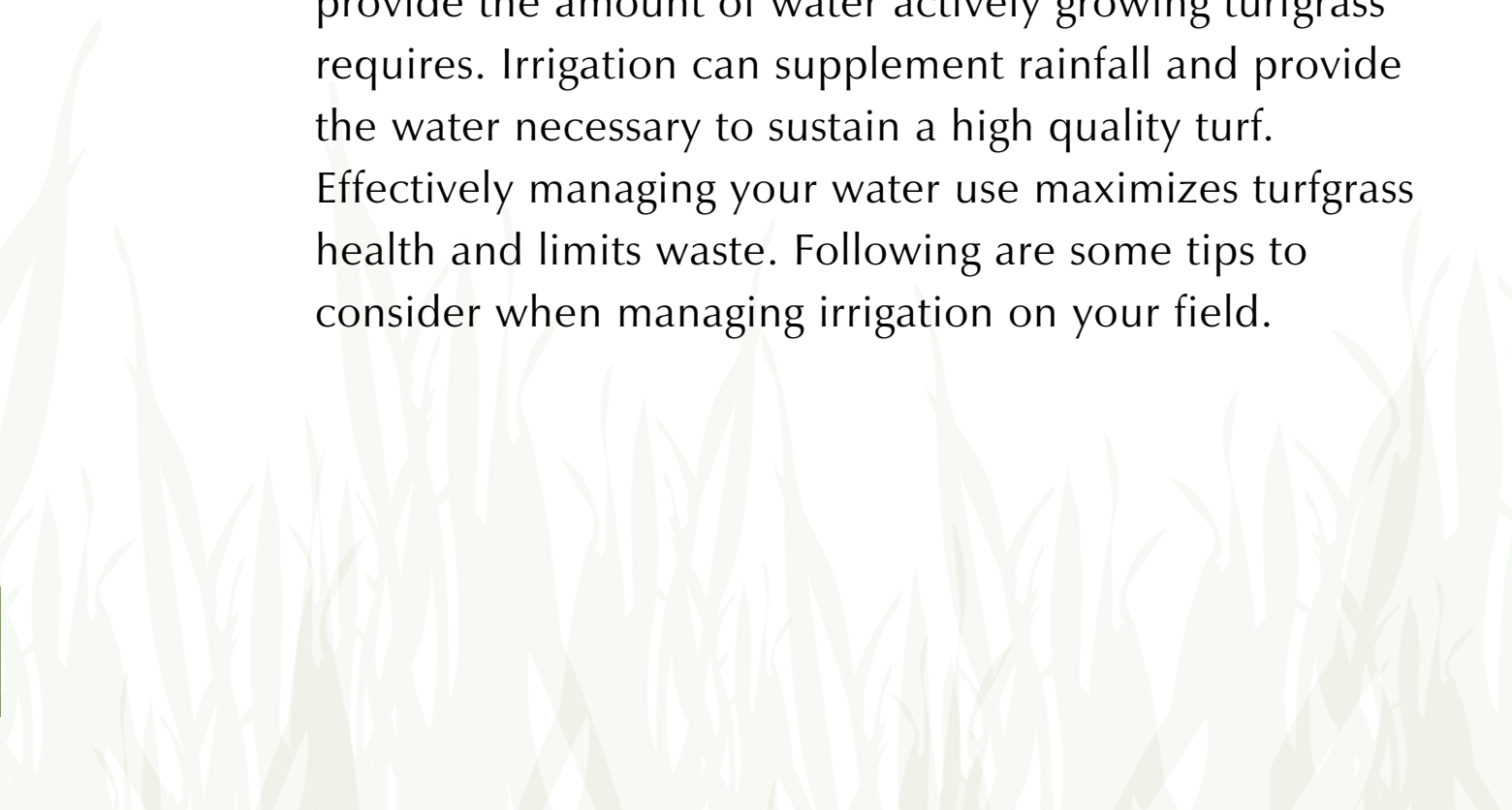
Conclusion

Regardless of the pest you are managing, whether it is diseases, insects or weeds, determine how the environmental conditions and cultural practices within your niche environment affect the pest. If improper environmental conditions or cultural practices are not remedied, pests will inevitably persist despite regular pesticide applications.

[CLICK HERE TO LEARN MORE
ABOUT IPM PRACTICES](#)

EFFECTIVE WATER USE

Just like all living plants, your turfgrass needs water for growth and survival. In most cases, rainfall does not provide the amount of water actively growing turfgrass requires. Irrigation can supplement rainfall and provide the water necessary to sustain a high quality turf. Effectively managing your water use maximizes turfgrass health and limits waste. Following are some tips to consider when managing irrigation on your field.





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Know Your Soil

Knowing the texture of your soil will help you determine how often to water.

- Sandy soils drain quickly, requiring more frequent watering than slower-draining clay soils.
- When watering soils high in clay, irrigation rates should be slow and over an extended period of time to allow the water to move into the soil without running off. If you have an automatic irrigation controller, scheduling soak times of 30 minutes between irrigation cycles reduces the risk of runoff.
- On high clay soils, schedule your watering at least one day prior to any game or practice to avoid muddy conditions.

How Often to Water

Your field loses water through evaporation and plant transpiration, known together as evapotranspiration (ET). The higher the ET level, the more water is lost. By monitoring your turfgrass along with environmental conditions, you can efficiently manage your water use.

- Watch for signs of moisture stress. The first sign of moisture stress is the turf turning a dull blue/purple color. One way to determine if the turf is



Figure 1. Monitoring the moisture in your soil is a great way to be sure you are not over or under watering your field.

under moisture stress is to see if your footprints spring back up after you walk across the field—if they don't, then it is time to water.

- Monitor soil moisture levels with a soil probe (Figure 1). The soil dries out from the top down so as you see the soil drying out 4 to 6 inches below the surface, you will know you need to water soon. Get in the habit of routinely checking your soil's moisture.
- Let the turf and soil tell you when to water – don't just set the controller to water every few days. Setting the controller to "Auto" and letting it go often leads to overwatering and inefficient water use and shallow, weak roots.



Figure 2. Early morning is the best time to irrigate.

- Water loss from evaporation and transpiration (ET rate) is highest on clear days with low humidity and high winds. You will need to water more frequently under these conditions compared to cloudy, high humidity, low wind speed days.
- Don't be afraid to turn the water off. Underwatering is better than overwatering. Allow the turf to show some signs of drought stress before you irrigate. This stimulates the plants to produce more roots. If you are not seeing any drought stress, you are overwatering.

How Much Water to Apply

The amount of water you put down during an irrigation event is just as important as how often you water.

- Apply enough water to moisten the soil to a depth of at 4-6 inches. Deep, infrequent watering is the best way to promote deep, healthy roots.
- Light watering (only wetting the top inch of soil) leads to shallow rooting because the roots do not need to grow deeper to find water. Light watering leads to a cycle of shallow, frequent watering, which only promotes additional shallow rooting, increased soil compaction, and the need for more frequent irrigation.

- A general rule on a loam soil is to apply $\frac{1}{2}$ to 1 inch of water (depending on soil texture) no more than twice per week during periods of active growth. This schedule must be adapted as rainfall and environmental conditions warrant.
- Place rain gauges or cans on your field and run the water for a set amount of time to determine how much water you are applying in that time period. You can then fine-tune the run time of the system to give the amount of water you want. You can also check if your sprinklers are evenly distributing water across the field.

What Time of the Day to Water

If you have an automatic irrigation system, you have the freedom to set your system to run any time of the day or night. Even if you don't have an automatic system, you can still pick times during the work day that lead to the most efficient water use.

- Irrigate in the early morning hours if possible. Watering between 4:00 and 9:00 AM is most efficient because both the evaporation rate and the wind speed are generally low.

- Avoid watering in the evening. Wet leaves favor disease development during the overnight hours.
- Avoid watering during midday. Although it doesn't hurt the turf and may even have a cooling effect, evaporation rates are highest during this time and you may need up to 30% more water to supply the same amount to the soil as an early morning watering.

Other Considerations

Athletic fields with a deep, healthy root system require less water than shallow rooted fields. As a result, tailor your maintenance practices to promote deep rooting.

- Avoid close mowing, excessive fertilization, soil compaction, and excessive thatch, as each of these leads to shallow rooting.
- Consider syringing to lengthen the time between irrigation events. Syringing is applying very small amounts of water to the turf canopy at the first signs of drought stress (around midday). This helps cool the plant without adding water to the soil. By syringing you can extend the time between deep waterings by a day or two.

Using Effluent Water

Effluent water, also known as non-potable, recycled, or reclaimed water, is becoming a viable option on golf courses and athletic fields as potable (drinking) water conservation is necessary in many parts of the country. Here are some facts about effluent water:

- Effluent water is partially treated wastewater from sewage or industry.
- Effluent water is cleansed of major pollutants but can contain high levels of salts, sodium, bicarbonates and/or heavy metals.
- Remaining harmful pollutants are filtered out by the turf before reaching groundwater.
- Effluent water also contains nitrogen as well as other nutrients used by turf.
- The quality of effluent water varies from region to region.

Management of Fields Using Effluent Water

If you are using effluent water, you must be prepared to monitor water and soil conditions.

- Test water four times per year and soil two times per year. Send samples to an independent lab that is familiar with saline and sodic soil

conditions along with turfgrass requirements. Be sure the lab is testing EC (electroconductivity) and SAR (sodium absorption ratio). Information on irrigation water testing can be found at <http://agsci.psu.edu/aasl/water-testing/irrigation-water-for-turfgrasses>.

- If your field is in an area with little rainfall and you rely heavily on effluent irrigation, you must pay extra attention to salt and sodium buildups. High levels of salts stunt turf growth and high levels of sodium destroy soil structure.
- Because of high salt and sodium levels, application of water above normal irrigation requirements (10-20% higher) is often needed to leach the salts and sodium below root depth.
- If the soil test shows high levels of sodium, gypsum along with heavy irrigation should be applied to help preserve soil structure.

Water Smart

You can improve the quality of your turf by watering correctly. If you understand the characteristics of your soil, constantly monitor soil moisture levels, and irrigate at the proper time of day, you will be watering effectively and responsibly. By following these guidelines, your turf will develop a deep, healthy root system that will help your field take on the stresses of gameplay.

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FIELD MANAGEMENT

During a **DROUGHT**

Managing turfgrass during drought conditions can be one of the most frustrating times for an athletic field manager. You may have perfectly groomed your field during the spring, but if you don't have an irrigation system or water restrictions are put into place, your field is at the mercy of Mother Nature. As water-use restrictions become more common across much of the country, turfgrass areas like athletic fields and golf courses are often the first to feel the ramifications. It is important to prepare your field and have a management plan for drought conditions before the weather turns dry. Once you are in a drought, there are still some management techniques that you can use to increase the chance that your turfgrass will green-up and start growing once it starts raining again. Here are some tips to get you through drought conditions.

Prepare for a Drought Before it Happens

Properly preparing your field to take on the stresses of a drought gives your turfgrass the best chance for survival.

Develop a Drought Contingency Plan

- Become aware of local and state drought regulations well in advance of drought conditions.
- Monitor your water usage throughout the year so you can provide information to drought regulators during a drought emergency. In some cases, this information is required to allow you to water your fields during a drought.
- Develop a written document that outlines your plans for watering during a drought. You can then share the plan with water regulators, administrators, athletes, parents, and the community.
- Establish a Best Management Practices (BMP) document for your facility. An outline/template can be found at http://commodities.caes.uga.edu/turfgrass/georgiaturf/Publicat/BMP/BMP_06.pdf
- Identify high priority areas that must be watered regularly such as a stadium field, infield, or the center of a practice field.

- Show how many gallons of water you can save by following your plan.
- Developing these documents will show that you are being proactive and have already planned out what you are going to do if a drought occurs.

Fertilization

- Take a soil sample and send it to your local testing facility (most universities can test your soil). You will get a report back with fertilizer recommendations that you can use to set up your fertilizer program. Proper nutrient levels in your soil promote healthy plants heading into drought stress.
- Avoid applying quick release nitrogen (urea, ammonium sulfate) late in the spring. These fertilizers decrease the plants' ability to handle dry conditions.

Promote Deep Roots

- Aerify with hollow tines to relieve soil compaction, reduce thatch, and increase oxygen levels in the soil during the spring and fall.
- Raise your mowing height if drought conditions are expected. Don't wait until the drought hits to raise your mowing height—it will be too late to help.



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www.proschoice1.com or 800-648-1166

- Alternate your mowing pattern to reduce soil compaction from mower tires.
- Water efficiently in the spring. Deep, infrequent irrigation promotes deeper rooting. Water enough to wet the soil 6 to 8 inches deep (check with a soil probe), and then wait to irrigate again until the turfgrass begins to turn a dull, blue color, the first sign of moisture stress.

Prepare the Irrigation System

- Perform an irrigation system audit. Place catch-cans of equal size in a grid pattern about 15 feet apart around each sprinkler and run each sprinkler for 15 minutes. You can then determine the distribution uniformity. Make adjustments to nozzles, arcs, and pressure regulators if needed.
- Make sure sprinklers are all rotating properly and are not leaking.
- Replace worn-out nozzles. You can get a water savings of up to 6% just by replacing worn-out nozzles.

What to Do During a Drought

Once the weather turns dry, do everything you can to reduce the stress on your turfgrass. You also must be prepared to communicate the condition of your field and your watering practices to interested parties.

Communication

- Hopefully you already have a written document explaining your plan and best management practices (BMPs) for watering during a drought (see above section on writing a contingency plan). You can use this document as the basis for your communication with administrators, coaches, parents, and athletes.
- Explain the consequences of playing on non-watered fields. These include injuries because of hard surfaces and worn-out plants that are unable to recover.

Maintenance Practices

- Do not perform any cultural practices such as aerification or vertical mowing during drought conditions—the grass will not be able to recover.
- Only mow when needed. Growth rate will be much slower during dry weather. Mowing when it is not needed only puts more stress on the plants.
- Do not apply growth regulators or pesticides. Herbicides can be especially damaging during hot, dry conditions.
- Avoid applying fertilizer until wet weather returns.



During drought conditions, focus on watering only high priority areas.

Irrigation Practices

- Water during the early morning hours (4:00 – 9:00 AM). This is the most efficient time to water because the evaporation rate is low and wind speed is minimal.
- Eliminate overspray onto sidewalks, parking lots, etc. where possible. This not only eliminates wasted water, but it is also important for public perception. You do not want to anger the public by visibly wasting large amounts of water at any time, especially during drought conditions.
- Focus on irrigating high priority areas like stadium fields, baseball infields, and centers of practice fields.

Managing Water Use During Water Restrictions

- Be aware of your local water restrictions and be sure to follow them. You are breaking the law if you don't abide by them and you can be fined.
- Be prepared to report your weekly water usage to your local water authority.
- Be ready to close the field during extreme conditions in order to avoid complete turfgrass loss and reduce the chance for athlete injury (and subsequent liability).

Alternative Water Sources

The use of alternative water sources such as effluent (reclaimed) water is gaining popularity on golf courses. Explore the possibility of using effluent water as an irrigation source. Because this water is not safe for drinking, you will not face the same water restrictions you do using potable (drinking) water.

Monitoring Drought Conditions

Monitoring drought conditions and forecasts will help you plan your field management schedule and keep you up-to-date on drought conditions in your area. Here are some useful websites for drought information.

- <http://www.drought.gov/>
- <http://www.cpc.ncep.noaa.gov/products/Drought/>
- <http://www.drought.unl.edu/>

Your state may also have its own drought-monitoring website.



How to Avoid the Field Work Day Prior to the Season

www.safdir.com



As we all know and realize, maintaining athletic fields and facilities can be a year round job for the coaches, grounds keeper, booster clubs, maintenance staff, etc. So often we hear of coaches setting the work day in January for “all hands on deck” and the long 12 hour or more day is spent edging, painting, cleaning bathrooms, concession stand etc. Over the next few paragraphs, we will hopefully give you some ideas that can be put in place throughout the year that will help you avoid the work day on the cold, cloudy, dreary January day.

[READ MORE](#)



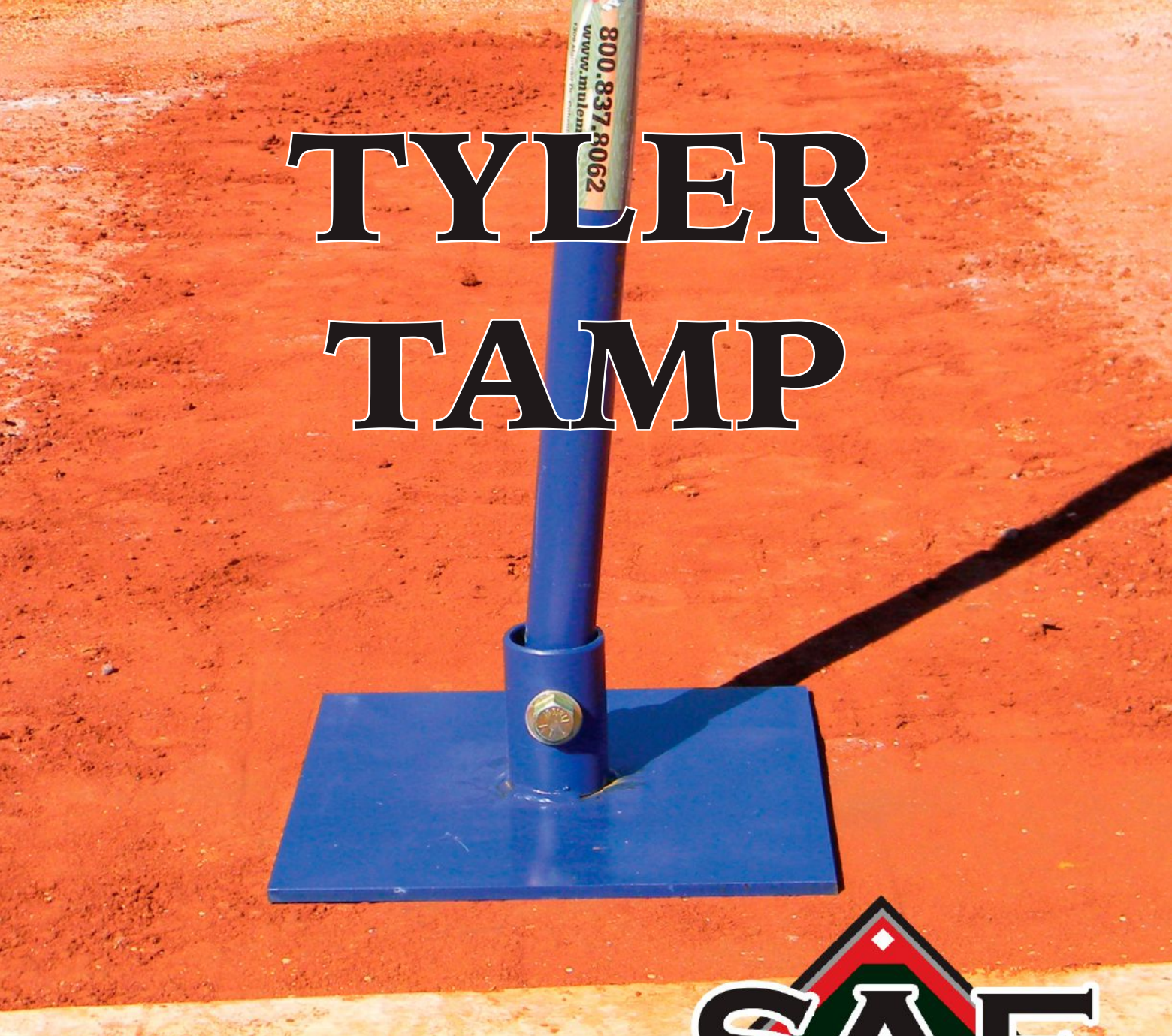
PowerPoint Presentation

Field Maintenance Tips



Southern Athletic Fields, Inc.

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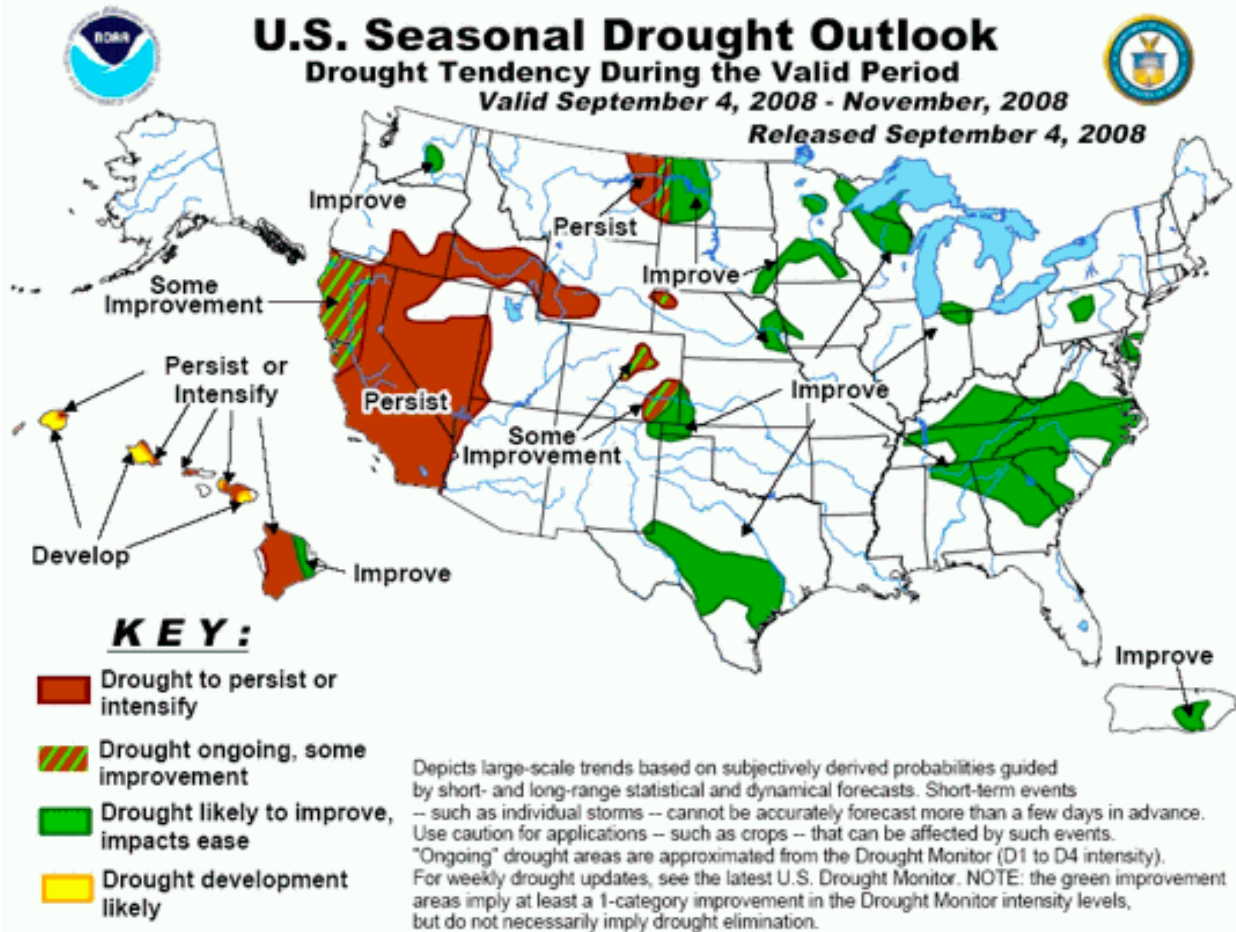
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Drought websites can not only give you current drought information, but they can also forecast future conditions (image from www.drought.gov).

Few things can be as stressful for a turf manager as watching your turfgrass wilt and die and not being able to do anything about it. Drought conditions often bring about water restrictions for turfgrass areas including athletic fields. By properly preparing the field before a drought occurs, you can increase chances for plant survival once water is scarce. Also, remember to outline your plans for watering during a drought before it occurs and be sure to communicate those plans. You can never win the battle against Mother Nature, but you can do your best to deal with her effects.

Sports & Recreation Fields **SAFETY FIRST!**

A new video series intended to educate the playing field users on some of the basics of what makes an athletic field safe and playable.

Coaches, referees, parents, volunteers, athletic directors — virtually anyone involved in outdoor sports — will benefit from watching how to evaluate the basic aspects of field safety before a team steps on it.

For more information on field safety and field management, contact STMA, STMAinfo@STMA.org or 800-323-3875, or go to SAFEFields.org



**Available for a Limited Time Only!
FREE to DOWNLOAD (scroll to bottom
of page and links are on the right)**

Natural Grass Fields: 5 min.

Synthetic Surfaces: 7 min.

Facilities and Field Equipment : 3.5 min.

**Also available at no charge
is a Safety Checklist.**